

County

Borough



of Bolton.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

AND

SCHOOL MEDICAL OFFICER

FOR

1910.

BOLTON :

ROBERT WHEWELL AND SON, PRINTERS, FOLDS ROAD.

1911.



COUNTY BOROUGH OF BOLTON.

SANITARY COMMITTEE.

The Mayor—Ald. J. T. COOPER, J.P.

Chairman—Ald. E. ASPINALL.

Vice-Chairman—Coun. W. HARGRAVES, J.P.

Ald. E. CHALLINOR.

„ KNOWLES EDGE, J.P.

„ J. GREENWOOD.

„ J. YOUNG, L.R.C.P.

Coun. C. AINSWORTH, J.P.

„ G. BLACKBURN.

„ J. BOARDMAN.

„ J. P. FRANCE.

Coun. W. MARSHALL.

„ J. MILLAR, M.B.

„ E. MONKS, M.B.

„ J. SHERRY.

„ F. STEEL.

„ H. TAYLOR.

„ R. TOOTILL, J.P.

„ G. UNSWORTH.

STAFF OF PUBLIC HEALTH DEPARTMENT.

Veterinary and Chief Meat Inspector—W. H. BRIDGE, M.R.C.V.S.

District Inspectors—1. GEORGE SOUTHERN.

2. EDWARD OAKES, Cert. R. San. I.

3. EDWARD HERBERT FARAGHER, Cert. R. San. I.
and Cert. for Food.

4. EVAN SUMNER, M. R. San. I.

5. HERBERT DANIELS, Cert. R. San. I.

6. THOMAS ROBINSON, Cert. R. San. I.

Chief Clerk—J. HOLKER, Cert. R. San. I.

Chief Disinfectors—JOHN WILSON.

Health Visitors—1. Miss D. C. EBBETTS, San. Cert. of London, Jt.
Bd., and Health Visitors Cert. of R. San. I.

2. Miss S. A. RAMSDEN, C.M.B., Cert. R. San. I.

School Nurses—1. Miss M. ASHWORTH, 3 years' Cert. Crumpsall
Infirmary, Manchester.

2. Miss C. KIPPAX, 3 years' Cert. St. Marylebone
Infirmary, Lond.

Matron Borough Fever Hospital—Miss ELIZ. BATEMAN.

Assistant Medical Officer of Health and Assistant School Medical Officer—

C. W. PAGET MOFFATT, M.A. Lond., M.B., B.C., D.P.H., Cantab.

Medical Officer of Health and School Medical Officer—

JOHN E. GOULD, M.D. Lond., D.P.H. Cantab.

Table of Contents.

Section I.—Vital and Mortal Statistics.

Summary	...	...	...	...	...	...	...	3
Population and Area	...	...	...	...	...	...	...	4
Births and Deaths	...	...	...	...	...	...	...	4
Populations, Birth-rates, &c., in Wards	...	...	...	...	...	...	...	5
Populations, Densities, Birth-rates, Death-rates and Infantile Mortality in Previous Years	...	...	...	...	...	...	...	6
Comparative View of Principal Causes of Death	...	...	...	...	...	...	...	7
Summary of Causes of Death...	...	...	...	...	...	...	...	9
Infantile Mortality	...	...	...	...	...	...	...	10
Epidemic Mortality	...	...	...	...	...	...	...	11
Bolton compared with 33 Great Towns	...	...	...	...	...	...	...	13
Meteorological Observations	...	...	...	...	...	...	...	14

Section II.—Infectious Diseases and Hospital Isolation.

Notification	...	...	...	...	...	...	...	3
Enteric Fever	...	...	...	...	...	...	3, 6, 10, 13	
Diphtheria	...	...	...	...	...	...	1, 5, 14	
Measles	...	...	...	...	...	...	...	14
Diarrhœa	...	...	...	...	...	...	...	19
Pulmonary Tuberculosis	...	...	...	...	...	...	...	22
Bacteriological Examination	...	...	...	...	...	...	...	19
Isolation of Infectious Diseases	...	...	...	...	...	...	...	19
Phthisis	...	...	...	...	...	...	...	22

Section III.—Sanitary Work and Water Supply.

Abstract of Sanitary Work	...	...	...	...	...	...	...	3
Public Health and Medical Inspection Staff	...	...	...	...	...	...	...	4
Housing of Working Classes	...	...	...	...	...	...	...	4
Closet Accommodation	...	...	...	...	...	...	...	8
Common Lodging Houses	...	...	...	...	...	...	...	11
Houses Let-in-Lodgings	...	...	...	...	...	...	...	11
Canal Boats	...	...	...	...	...	...	...	12
Travelling Vans	...	...	...	...	...	...	...	12
Factories	...	...	...	...	...	...	...	12
Workshops and Workplaces	...	...	...	...	...	...	...	13

Section III.—Continued.

Bakehouses	...	...	...	...	...	...	...	13
Cowsheds, Dairies and Milk Shops	...	...	...	...	...	...	...	16
Offensive Trades and Slaughterhouses	...	...	...	...	...	...	...	16
Smoke Abatement	..	...	...	...	...	...	...	17
Animals and Food Inspection	...	...	...	...	...	...	...	19
Public Analyst's Report	...	...	...	...	...	...	...	24
Baths	...	...	...	...	...	...	...	27—28
Water Supply	...	...	...	...	...	...	...	29

Section IV.—Births Notification.

Notification of Births ...	...	...	...	...	...	3
Work of Health Visitors ...	...	...	...	...	...	3
Employment of Married Women	...	...	...	...	...	7
Control of Midwives ...	...	...	...	...	...	19

Section V.—School Medical Officer's Report.

Medical Officer's Report	..	...	...	...	3—4
Sanitary Survey of Schools	...	...	...	...	5—6
Sanitary Improvements	...	...	...	...	7
Organisation	...	...	...	...	9
Extent and Scope of Medical Inspection	...	...	...	...	10—11
Facts disclosed by Medical Inspection	...	...	...	...	12—40
Treatment of Defects	...	...	...	...	41—43
Special Schools for Mentally Defective and Epileptic	...	...	...	...	44—45
Blind and Deaf Children	...	...	...	...	46
Infectious Disease in Schools...	...	...	...	...	46

Section VI.—Mortality Tables.

Causes of Death under Sex, Age, and Ward	...	2—11
Local Government Board Tables:—		
Population, Births and Deaths in Previous Years	...	12
Ward Populations, Births, and Deaths	...	13—15
Infectious Disease	... ..	16
Causes of, and Ages, at Death	... ..	17
Infantile Mortality	... ..	18
Birth-rates, Death-rates, and Infantile Mortality in		33
Great Towns	... ..	19

**Extracts from Memorandum of Local Government Board
November, 1906, as to the Annual Reports of
Medical Officer of Health.**

“The Report should be chiefly concerned with the conditions affecting health in the district, and with the means for improving those conditions. It should contain an account, brought up to the end of the year under review, of the Sanitary circumstances of the district, and of any improvement or deterioration which may have occurred during the year in these circumstances. Care should be taken to report fully and explicitly on the influences affecting or threatening to affect injuriously the public health in the district, and on the action which has been taken, or which may still be needed, with a view to combat those influences. It is of especial importance that the Medical Officer of Health should record what action has been taken to remedy unhealthy conditions which have been reported by him in previous annual reports, or in special reports presented during the year under review, and that attention should be called afresh year by year to such as remain unremedied.”

The subjects to be especially borne in mind are :—

- (1) Physical features of the District.
- (2) House accommodation.
- (3) Occupation and influence on health.
- (4) Sewerage and drainage.
- (5) Excrement and refuse disposal, system in vogue, defects if any.
- (6) Water supply, sufficiency, wholesomeness and freedom from risk of pollution.
- (7) Places over which the Council have supervision.
- (8) Nuisances—byelaws.
- (9) Method of dealing with infectious disease.
- (10) Schools and their sanitary condition and action taken in regard to the health of the scholars.
- (11) Medical inspection of school children as part of the duties of School Medical Officer.

GENTLEMEN,

The Report for 1910 does not differ materially from those of previous years; the form in which it is now issued having proved convenient for reference and record.

The year 1909 was a record one for low death-rates, and I have again the pleasure to report a further reduction in the general death-rate, the infantile mortality, the epidemic death-rate, and especially in the enteric fever death-rate.

The abolition of the great filth nuisance of Bolton—the privy-midden—is progressing surely but slowly, and has I believe already had its effect on the health of the inhabitants.

The tuberculosis problem has been brought prominently before the public during the year, and several important steps have been taken by the Sanitary Committee for the prevention of the spread of the disease.

The reports of the Veterinary Inspector and Public Analyst and also a report on the Home Office Enquiry into the industrial employment of married women are included.

Medical Inspection of School Children is now firmly established, and a detailed report will be found dealing with this subject.

The health of the people is a matter of such national concern that it is not surprising to find the work of a Public Health Department constantly increasing. The work during the year could not have been satisfactorily performed had it not been for the devotion to duty and willing assistance of all the Members of the Public Health and Medical Inspection Staff. The Members of the Sanitary Committee, and especially the Chairman, have not only publicly shewn appreciation of our efforts, but have always been ready to support and to show us every consideration.

I am,

Yours obediently,

JOHN E. GOULD,

Medical Officer of Health.

Public Health Department, Bolton,

31st January, 1911.

SECTION I.

Vital and Mortal Statistics.

SUMMARY OF VITAL AND MORTAL STATISTICS. 1910.

Position	Lat. 53° 35' N., Lon. 2° 37' W.
Elevation above sea level	230 ft. to 1450 ft.
Geological Formation :—Boulder Clay and Sand over Coal Measures.	
Area in Acres	15283
Population	190315
Density	12·4
Inhabited Houses—Census 1901	35995
Uninhabited Houses—Census 1901	3093
New Houses Certified 1901–1910 inclusive	5058
New Houses Certified 1910	618
Rateable Value at 31st Dec. 1910	£843463
Births	4380
Birth rate	23·0
Deaths	2568
Death-rate (Corrected for Institutions)	13·4
Corrected Death-rate (ascertained by application of Registrar-General's Factor 1·1308)	15·1
Average Death-rate (1900-9)	16·7
Infantile Mortality	116
Epidemic Death-rate (Seven Chief Diseases)	1·02
Diarrhœa Death-rate	·33
Diarrhœa Mortality per 1000 Births	14·3
Gastritis and Enteritis Mortality per 1000 Births	15·0
Phthisis Death-rate	1·02
Death-rate from other forms of Tuberculosis	·31
Respiratory Death-rate	2·79
Rainfall (23 years' average, 41)	45·54
77 Great Towns Death-rate	13·4
77 Great Towns Epidemic Death-rate	1·23
77 Great Towns Infantile Mortality	115
England and Wales Death-rate	13·4
England and Wales Epidemic Death-rate	·99
England and Wales Infantile Mortality	106

Population and Area.

For the middle of 1910 the estimated population was **190,315** and this on an area of 15,283 acres, or 23·8 sq. miles, gives a density of 12·4 persons per acre.

Births.

4,380 births were registered less than last year, equal to a birth-rate of **23·0**. The illegitimate births numbered 176, and were 4·0 per cent. of the total births.

Deaths.

2,568 deaths were registered of Bolton residents, including those who died in Institutions outside the Borough. The death-rate was **13·4**, the lowest on record, while the average for ten years was 16·7. There were 228 deaths in the Workhouse, 130 in the Bolton Infirmary, 57 in Lunatic Asylum, 22 in the Borough Fever Hospitals, and 11 in other institutions outside the Borough. 36 of those who died in the Infirmary were non-residents.

The deaths in the wards varied from 10·1 in Halliwell to 20·8 in Exchange Ward.

The following table shows the death-rates during the last eleven years in the Old Borough, Added Area, and Extended Borough.

Year	Extended Borough		Old Borough		Added Area	
1899	...	19·9	...	20·5	...	18·0
1900	...	19·6	...	20·5	...	16·7
1901	...	18·2	...	19·3	...	15·0
1902	...	17·2	...	18·3	...	14·2
1903	...	17·6	...	18·2	...	15·9
1904	...	17·0	...	17·8	...	14·6
1905	...	15·4	...	15·9	...	14·0
1906	...	15·4	...	16·6	...	12·3
1907	...	16·7	...	17·7	...	14·2
1908	...	15·5	...	16·2	...	13·6
1909	..	15·3	...	16·0	...	13·7
1910	...	13·4	...	13·9	...	12·4

TABLE I.

POPULATIONS, BIRTH-RATES, &c., IN WARDS, 1910.

WARD.	Population.	Area.	Density.	Birth-rate.	Death-rate.	Infantile Mortality.	Zymotic Death-rate.
West	28567	450	63'4	23'8	14'7	118	1'08
Halliwell	25470	358	71'1	20'1	10'1	85	'35
Derby	21037	300	70'1	23'7	13'6	132	1'37
Bradford	20983	285	73'6	27'0	15'2	126	1'28
Rumworth	9906	163	60'7	24'3	12'3	116	1'71
East	9626	160	60'1	28'0	19'0	144	1'55
Church	8575	390	21'9	18'8	13'9	117	1'16
North	8182	150	54'5	21'6	12'2	101	'85
Exchange	4070	105	38'7	28'9	20'8	194	2'21
Old Borough	136416	2361	57'7	23'6	13'9	120	1'12
Great Lever	12468	867	14'3	19'8	10'8	129	'64
Tonge	11565	830	13'9	21'7	12'0	99	'95
Astley Bridge	9132	1780	5'1	17'5	11'4	81	'32
Smithills... ..	6040	2108	2'8	21'3	12'2	69	'33
Hulton	5776	1620	3'5	24'0	12'9	93	1'03
Darcy Lever-cum-Brightmet	3440	1372	2'5	26'1	18'3	144	2'32
Deane-cum-Lostock	3280	2601	1'2	26'8	14'9	136	1'21
Heaton	2198	1744	1'2	20'9	14'1	43	...
Added Area	53899	12922	4'1	21'3	12'4	103	'77
Extended Borough	190315	15283	12'4	23'0	13'4	116	1'02

TABLE II.

POPULATIONS, DENSITIES, BIRTH-RATES, DEATH-RATES AND
INFANTILE MORTALITY IN PREVIOUS YEARS.

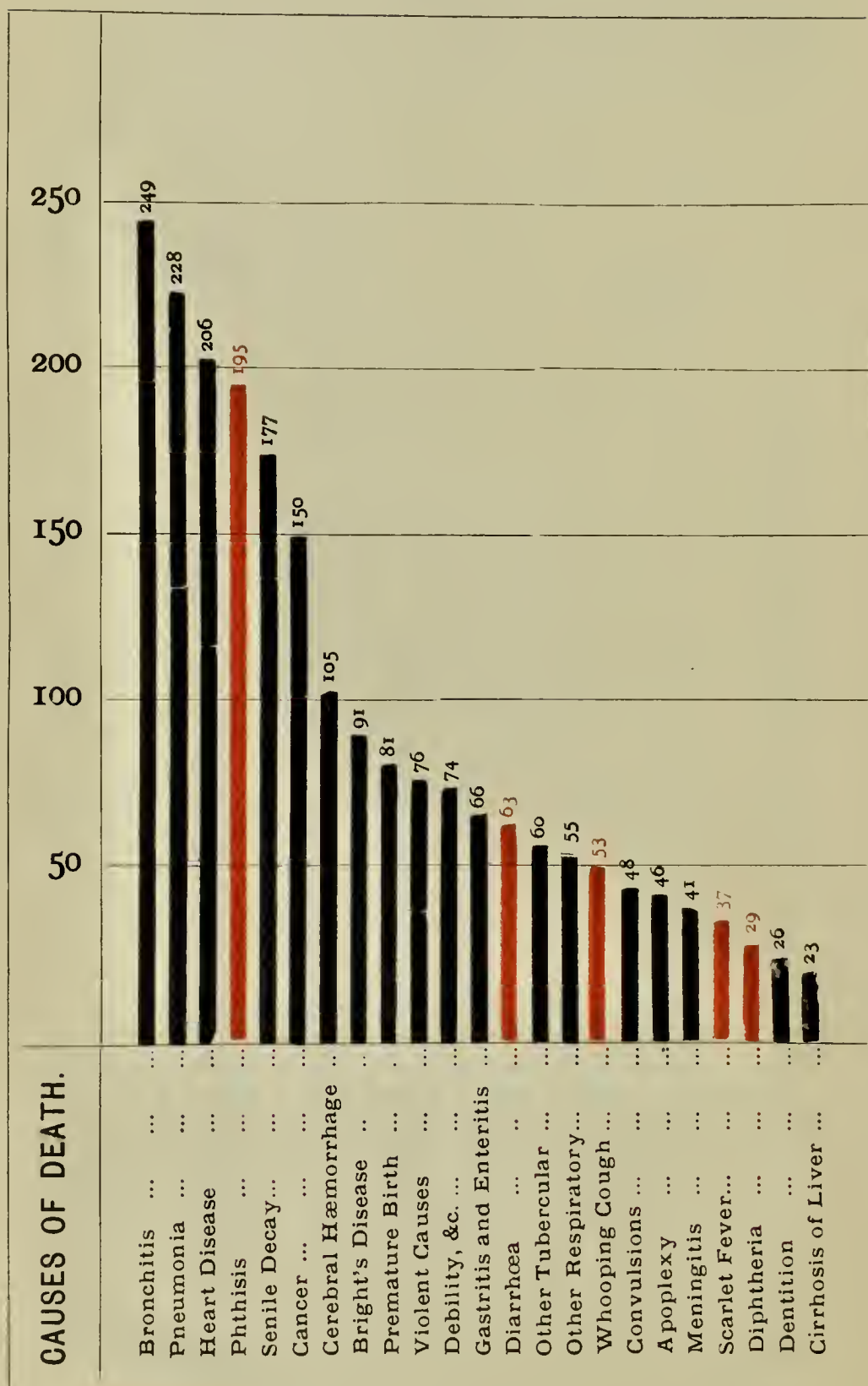
Year.	Population	Density	Births	Birth-rate.	Deaths.	Death-rate	Infantile Mortality.
1773	5600	3'0					
1791—1800	14437	7'8					
1801—1810	20444	11'1					
1811—1820	27364	14'8					
1821—1830	37240	20'2					
*1831—1840	46579	25'3					
1841—1850	55167	29'9					
1851—1860	61645	33'5				30'7	
1861—1879	75999	41'2				29'4	
1871	83095	45'1				26'1	
1872	84072	45'6				28'0	
1873	85061	46'2				23'3	
1874	86061	46'7	3526	40'9	2219	25'7	178
1875	87073	47'3	3552	40'7	2403	27'5	193
1876	88097	47'8	3722	42'2	2193	24'9	169
1877	89133	48'4	3596	40'3	2226	24'9	169
†1878	102919	43'5	3952	38'3	2313	22'4	181
1879	103819	43'9	3897	37'5	2233	21'5	158
1880	104727	44'3	4644	44'3	2835	27'0	179
1871—1880	91405	45'8	3841	40'6	2346	24'8	175
1881	105643	44'7	3811	36'0	2022	19'1	151
1882	106567	45'1	3834	35'9	2277	21'3	170
1883	107499	45'5	3697	34'3	2157	20'0	171
1884	108439	45'9	3701	34'1	2615	24'1	194
1885	109387	46'3	3788	34'6	2282	20'8	161
1881—1885	107507	45'5	3766	34'9	2270	21'0	169
1886	110343	46'7	3786	34'3	2572	23'3	184
1887	111308	47'1	3627	32'5	2393	21'4	172
1888	112281	47'5	3729	33'2	2453	21'8	170
1889	113263	47'9	3759	33'1	2528	22'3	166
1890	114253	48'3	3726	32'5	2986	26'1	176
1886—1890	112289	47'5	3725	33'1	2586	22'9	173
1891	115253	48'8	3914	33'9	2516	21'6	165
1892	116261	49'2	3769	32'4	2648	22'6	185
1893	117278	49'6	3874	33'0	2813	23'8	200
1894	118309	50'1	3719	31'4	2215	18'5	162
1895	119337	50'5	3960	33'1	2862	23'7	213
1891—1895	117286	49'6	3847	32'7	2610	22'2	185
1896	120380	50'9	3792	31'7	2496	20'7	165
1897	121433	51'5	3985	32'8	2671	21'9	184
1898	122495	51'8	3800	31'0	2350	19'1	167
†1899	162222	10'6	4878	30'0	3238	19'9	180
1900	164240	10'7	4775	29'0	3222	19'6	170
1896—1900	138154	35'1	4246	30'9	2795	20'2	173
1901	168748	11'0	4648	27'5	3085	18'2	172
1902	171082	11'1	4779	27'9	2959	17'2	132
1903	173401	11'3	4700	27'1	3162	17'6	151
1904	175744	11'4	4736	26'9	2994	17'0	167
1905	178111	11'6	4481	25'1	2754	15'4	166
1901—1905	173417	11'2	4668	26'8	2963	17'0	157
1906	180502	11'8	4599	25'4	2794	15'4	138
1907	182917	11'9	4476	24'4	3073	16'7	145
1908	185358	12'1	4573	24'6	2874	15'5	148
1909	187824	12'2	4750	25'2	2832	15'3	120
1910	190315	12'4	4380	23'0	2568	13'4	116
1906—1910	185383	12'0	4555	24'5	2840	15'2	134

* Incorporation in 1838 with 48000 population and 1840 acres.

† Added in 1878 part of Rumworth with 163 acres and 3000 population,
and part of Halliwell with 358 acres and 10,000 population.

‡ Borough extended and 38000 added to the population.

Comparative View of the Principal Causes of Death, 1910.



Deaths from Infectious Diseases



Deaths from Diseases other than Infectious.

SUMMARY OF CAUSES OF DEATH, 1910

General Diseases.

	No. of Deaths.	Per cent. of Total Deaths.	Death-rate per 1000 of pop'n.
1. Specific Febrile or Epidemic Diseases... ..	231	8.9	1.21
2. Constitutional Diseases :—			
(a) Phthisis	195	7.5	1.02
(b) Other Tubercular ..	60	2.3	.31
(c) Cancer	150	5.8	.78
3. Developmental Diseases :—			
(a) Premature Birth ...	81	3.1	.42
(b) Old Age	177	6.8	.93

Local Diseases.

1. Nervous System	163	6.3	.85
2. Heart	206	8.0	1.08
3. Blood Vessels... ..	169	6.5	.88
4. Respiratory System :—			
(a) Bronchitis	249	9.6	1.30
(b) Pneumonia	228	8.8	1.19
(c) Other Respiratory ...	55	2.1	.28
5. Digestive System	182	7.0	.95
6. Urinary System	117	4.5	.61
7. Pregnancy and Child Birth ...	9	.3	.04
8. Ill-Defined and not Specified Diseases... ..	77	2.9	.40

Violent Causes.

1. Accidents	64	2.4	.33
2. Suicide... ..	12	.4	.06

Infantile Mortality.

509 or 19 per cent. of the total deaths were those of children under one year of age, equal to an infantile mortality of **116** per 1000, births, and the lowest on record. The average for 1900-9 was 151, and the average for 77 great towns for 1910 was 115.

It will be noticed that the infantile mortality varied from 43 in Heaton Ward to 194 in Exchange Ward.

WARD.			Deaths under 1 year		Infantile Mortality	
		Births				
West	...	682	...	81	...	118
Halliwel	...	513	...	44	...	85
Derby	...	499	...	66	...	132
Bradford	...	567	...	72	...	126
Runworth	...	241	...	28	...	116
East	...	270	...	39	...	144
Church	...	162	...	19	...	117
North	...	177	..	18	...	101
Exchange *	...	118	...	23	...	194
Great Lever	...	247	...	32	...	129
Tonge	...	252	...	25	...	99
Astley Bridge	...	160	...	13	...	81
Smithills	...	129	...	9	...	69
Hulton	...	139	...	13	...	93
Darcy Lever-cum-Brightmet	...	90	...	13	...	144
Deane-cum-Lostock	...	88	...	12	...	136
Heaton	...	46	...	2	...	43
Borough			...	509	...	116

The causes of death under one year were as follows:—

	1909.	1910.
Diarrhœa	41	43
Enteritis and Gastritis	27	41
Respiratory Diseases	105	94
Debility, &c.	101	71
Premature Birth	96	81
Convulsions	59	36
Whooping Cough	15	24
Congenital Defects	25	17
Meningitis	17	11
	486	418
Other Various Causes	113	91
	599	509

Mortality from Epidemic Diseases.

196 deaths were registered from the seven chief epidemic diseases, equal to a death-rate of 1·02, lower than the average for the last ten years, which was 2·05. It is also lower than that for the 77 great towns, which was 1·23.

The causes of death are set out here, and the death-rates in previous years in Table III.

CAUSES OF DEATH FROM ALL EPIDEMIC DISEASES:—

			1909.	1910.
Seven Chief Epidemic Diseases.	Small-pox	... ..	—	—
	Scarlet Fever	... ..	25	37
	Diphtheria and Membranous Croup	20	..	29
	Enteric, Continued Fever	... ..	33	12
	Diarrhœa	... ..	51	63
	Measles	... ..	41	2
	Whooping Cough	... ..	34	53
	Influenza	... ..	22	16
	Other Epidemic Diseases	... ..	19	19
Total			245	231

TABLE III.

DEATH-RATES FROM THE SEVEN EPIDEMIC DISEASES, 1886-1910.

Year.			Small-pox.	Scarlet Fever.	Diphtheria and Membr Croup	Fever.	Measles.	Whooping Cough.	Diarrhoea.	Seven Chief Epidemic.
1886	...	...	—	·14	·06	·16	1·23	·67	1·39	4·4
1887	...	...	—	·32	·06	·31	·80	·24	1·29	3·06
1888	...	...	—	·45	·06	·33	·29	·50	·99	2·6
1889	...	...	—	·56	·25	·27	1·39	·55	·91	4·1
1890	...	...	—	·48	·12	·22	·83	·92	·94	3·53
1891	...	...	—	·18	·08	·27	·47	·38	·81	2·22
1892	..	...	—	·25	·11	·17	·36	·92	1·10	2·95
1893	...	...	·05	·28	·06	·28	1·38	·66	1·67	4·42
1894	...	...	—	·08	·04	·21	·16	·51	·57	1·59
1895	...	...	—	·17	·12	·41	1·00	·56	1·74	4·03
1896	...	...	—	·32	·07	·41	·04	·83	·85	2·50
1897	...	...	—	·18	·03	·29	1·77	·32	1·63	4·16
1898	...	...	—	·16	·06	·28	·25	·36	1·80	2·93
1899	...	...	—	·22	·08	·33	·57	·27	1·59	3·08
1900	...	...	—	·12	·12	·29	·22	·50	1·13	2·40
1901	...	...	—	·30	·15	·23	·64	·59	1·42	3·05
1902	...	...	·04	·68	·27	·23	·18	·30	·40	2·12
1903	...	...	·01	·34	·21	·20	·28	·05	·87	1·98
1904	...	...	·005	·12	·16	·21	·09	·76	·88	2·25
1905	...	...	—	·02	·09	·19	·51	·04	1·01	1·88
1906	...	...	—	·09	·13	·22	·01	·11	1·15	1·72
1907	...	...	—	·16	·10	·14	1·27	·34	·36	2·40
1908	..	...	—	·11	·08	·19	·01	·44	·84	1·69
1909	...	...	—	·13	·10	·17	·21	·18	·27	1·08
Average 1900-1909 }			·005	·20	·14	·20	·34	·33	·83	2·05
1910	...	...	—	·19	·15	·06	·01	·27	·33	1·02

TABLE IV.

33 GREAT TOWNS.—DEATH-RATES PER 1000 LIVING FROM ALL CAUSES AND FROM THE PRINCIPAL EPIDEMIC DISEASES, AND INFANT MORTALITY IN THE FIVE YEARS 1904-1908, AND IN 1909.

TOWNS.	ALL CAUSES		SMALL-POX.		MEASLES.		SCARLET FEVER.		DIPHTHERIA.		WHOOPING-COUGH.		FEVER.		DIARRHŒA.		DEATHS UNDER ONE YEAR TO 1000 BIRTHS.	
	Five years 1904-1908.	1909.	Five years 1904-1908.	1909.	Five years 1904-1908.	1909.	Five years 1904-1908.	1909.	Five years 1904-1908.	1909.	Five years 1904-1908.	1909.	Five years 1904-1908.	1909.	Five years 1904-1908.	1909.	Five years 1904-1908.	1909.
76 TOWNS.	15.8	14.7	0.00	0.00	0.40	0.48	0.12	0.11	0.17	0.15	0.32	0.24	0.08	0.06	0.85	0.38	140	118
LONDON...	14.9	14.0	0.00	0.00	0.39	0.48	0.11	0.08	0.15	0.13	0.30	0.26	0.05	0.03	0.71	0.33	127	108
CROYDON ...	13.0	11.7	—	—	0.30	0.13	0.06	0.06	0.22	0.15	0.18	0.19	0.03	0.02	0.50	0.12	109	80
WEST HAM ...	15.1	14.0	0.00	0.00	0.52	0.69	0.15	0.17	0.22	0.13	0.39	0.58	0.11	0.02	1.44	0.65	145	124
BRIGHTON ...	14.8	15.3	—	—	0.25	0.01	0.01	0.06	0.09	0.15	0.20	0.17	0.03	0.05	0.38	0.21	113	96
PORTSMOUTH ...	15.6	14.2	—	—	0.40	0.49	0.05	0.09	0.30	0.31	0.25	0.13	0.12	0.15	0.72	0.25	125	96
SOUTHAMPTON ...	13.4	13.4	0.01	—	0.27	—	0.03	0.04	0.17	0.15	0.21	0.34	0.05	0.10	0.62	0.42	116	106
NORWICH ...	16.2	13.9	—	—	0.41	0.68	0.03	0.07	0.22	0.15	0.23	0.16	0.14	0.07	0.95	0.41	153	119
PLYMOUTH ...	16.3	14.5	0.00	—	0.29	0.43	0.14	0.05	0.14	0.15	0.22	0.19	0.08	0.07	0.67	0.31	140	131
BRISTOL ...	14.3	12.7	0.00	0.02	0.31	0.24	0.08	0.03	0.20	0.14	0.28	0.14	0.05	0.03	0.41	0.27	122	100
BIRMINGHAM ...	17.0	15.4	0.00	—	0.38	0.93	0.12	0.19	0.19	0.16	0.49	0.26	0.08	0.04	1.08	0.45	162	134
LEICESTER ...	13.5	12.9	0.00	—	0.34	0.41	0.13	0.09	0.06	0.06	0.26	0.21	0.04	0.02	0.84	0.43	149	127
NOTTINGHAM ...	16.6	16.3	0.01	—	0.40	0.54	0.06	0.04	0.18	0.10	0.30	0.22	0.15	0.08	0.98	0.69	162	150
DERBY ...	14.3	13.4	0.01	—	0.26	0.36	0.04	0.03	0.33	0.26	0.19	0.33	0.08	0.02	0.47	0.26	128	123
BIRKENHEAD ...	16.7	15.9	0.00	—	0.54	0.33	0.17	0.13	0.21	0.15	0.38	0.12	0.10	0.04	1.07	0.40	141	123
LIVERPOOL ...	20.2	19.0	0.00	—	0.55	0.61	0.26	0.28	0.20	0.15	0.43	0.30	0.12	0.07	1.45	0.70	161	144
Bolton	15.9	15.1	0.00	—	0.38	0.23	0.11	0.13	0.12	0.09	0.34	0.17	0.20	0.18	0.88	0.33	154	128
MANCHESTER ...	18.9	17.9	0.00	—	0.56	0.62	0.15	0.26	0.18	0.17	0.39	0.19	0.10	0.14	1.09	0.43	162	134
SALFORD ...	18.4	18.0	0.00	—	0.67	0.80	0.25	0.34	0.41	0.44	0.42	0.19	0.17	0.18	1.15	0.50	158	141
OLDHAM ...	18.8	19.1	0.03	—	0.52	0.33	0.20	0.11	0.15	0.10	0.36	0.11	0.08	0.08	0.90	0.36	151	119
BURNLEY ...	18.2	16.1	0.01	—	0.57	0.20	0.14	0.15	0.14	0.14	0.33	0.15	0.13	0.08	1.53	0.58	194	156
BLACKBURN ...	16.4	16.3	—	—	0.37	0.31	0.25	0.38	0.15	0.15	0.29	0.17	0.12	0.13	0.73	0.35	159	126
PRESTON ...	18.7	15.8	0.01	—	0.69	0.16	0.06	0.07	0.14	0.09	0.36	0.56	0.19	0.09	1.24	0.33	170	136
HALIFAX ...	14.7	13.9	0.02	—	0.27	0.03	0.09	0.17	0.24	0.24	0.18	0.15	0.07	0.06	0.25	0.12	116	97
BRADFORD ...	15.9	14.5	0.01	—	0.28	0.16	0.09	0.07	0.27	0.17	0.22	0.15	0.12	0.05	0.62	0.16	146	116
LEEDS ...	15.9	14.1	0.00	—	0.44	0.16	0.09	0.02	0.12	0.13	0.33	0.17	0.09	0.09	0.76	0.23	149	122
SHEFFIELD ...	16.6	15.1	0.00	—	0.46	0.88	0.24	0.09	0.13	0.08	0.35	0.11	0.10	0.07	1.29	0.55	154	118
HULL ...	16.8	14.9	0.01	0.01	0.41	0.31	0.05	0.04	0.30	0.23	0.32	0.18	0.12	0.04	1.34	0.57	152	114
SUNDERLAND ...	18.7	16.9	0.00	—	0.38	1.03	0.05	0.10	0.21	0.20	0.44	0.23	0.14	0.09	0.82	0.33	144	135
SOUTH SHIELDS ...	16.7	15.1	0.02	—	0.43	0.32	0.07	0.16	0.19	0.17	0.48	0.31	0.10	0.03	0.55	0.34	151	112
GATESHEAD ...	16.1	12.7	0.06	—	0.34	0.20	0.08	0.11	0.20	0.12	0.47	0.13	0.06	0.01	0.96	0.34	151	112
NEWCASTLE-ON-TYNE ...	17.0	14.8	0.02	—	0.31	0.40	0.07	0.11	0.19	0.19	0.42	0.26	0.04	0.06	0.54	0.20	140	119
CARDIFF ...	14.0	13.1	0.00	0.01	0.36	0.11	0.07	0.04	0.12	0.07	0.28	0.26	0.05	0.04	0.56	0.32	132	103
RHONDDA ...	17.8	16.3	—	—	0.60	0.35	0.09	0.11	0.19	0.25	0.33	0.20	0.19	0.03	1.49	0.97	182	129

In this table 0.00 indicates that the deaths were too few to give a death-rate of 0.005; where *no deaths* occurred, — is inserted.

TABLE V.

METEOROLOGICAL OBSERVATIONS, 1910
(From the Borough Meteorologist's Report).

Month.	Baro- meter	Readings of Thermometers.					Elastic Force of the Aqueous Vapour.	Mean Amount of Humidity Saturation per 100°.	Rain.		Registered Sunshine in Hours.	Mean amount of Ozone 0 — None 10 — Maximum
	Corrected and Reduced to 32° Far. Mean sea level.	Maximum.	Minimum.	Mean.	Range.	Dew-point.			Amount Collected.	Number of Days.		
January ...	" 29·821	0 41·8	0 30·7	0 36·62	0 11·0	0 33·2	" 189	% 88·3	" 4·275	20	h. m. 30-25	·80
February	29·539	44·3	34·3	39·28	10·0	35·8	·213	87·8	3·723	28	52-40	·80
March ...	30·155	49·4	35·6	41·84	13·4	36·4	·217	81·6	0·874	15	98-20	·50
April ...	29·817	50·4	37·1	42·99	12·8	38·0	·232	79·6	3·635	24	83-0	·70
May ...	29·890	59·4	43·1	49·99	16·1	44·1	·289	76·5	3·590	21	200-40	·70
June ...	29·875	65·8	50·5	56·48	15·6	49·6	·356	73·8	3·161	16	170-55	·57
July ...	29·858	61·0	49·5	55·67	14·6	49·3	·352	74·3	4·595	16	164-20	·55
August ...	29·823	64·8	51·7	56·81	13·4	52·5	·397	81·0	6·074	24	94-45	·58
September	30·269	60·8	47·6	53·52	13·2	47·8	·333	79·4	0·544	9	102-15	·37
October ...	30·067	56·1	45·6	50·24	10·9	44·6	·300	80·8	3·747	14	61-15	·45
November.	29·613	42·3	31·9	36·84	10·3	33·0	·189	92·5	7·513	27	50-45	·50
December.	29·667	46·7	37·9	43·03	8·7	39·5	·242	88·6	3·813	28	9-45	·40
Mean or Total 1910	29·866	53·6	41·3	46·94	12·5	42·0	·276	82·0	45·544	242	1119-5	·58
Yearly Averages, 1887-1910	29·980	53·4	41·6	46·83	11·8	41·7	·278	81·5	41·580	212	1000-30	1·03

SECTION II.

Infectious Diseases

AND

Hospital Isolation.

Notifications.

1182 cases of infectious disease were notified during the year ; this was an increase on the number for 1909, but still below the average for the last ten years. There were also notified 246 first notifications of pulmonary tuberculosis.

These notifications included, 906 scarlet fever, 106 diphtheria, 71 enteric fever, 91 erysipelas, and 8 puerperal fever. Bolton was free from small-pox.

The incidence was 7·4 in the Added Area, 5·7 in the Old Borough, and varied in the Wards from 1·8 in Heaton Ward to 13·4 in Deane-cum-Lostock Ward.

There were 37 deaths from scarlet fever, 29 from diphtheria, 12 from enteric fever, 63 from diarrhoea, 2 from measles, and 53 from whooping cough.

The epidemic death rate was 1·02, lower than last year and in fact the lowest yet recorded.

Enteric Fever.

Only 71 cases were notified in 66 houses, nearly 50 per cent. less than the number for 1909 which was 138. It will be seen from the chart that there has been a marked and steady reduction since 1899, and this is very satisfactory from the fact that it indicates an improvement in the sanitary conditions in the neighbourhood of houses and particularly in the type of sanitary conveniences. None of the houses infected had more than two cases.

The cases and deaths in the different wards are as follows : -

Ward.	Cases.	Deaths.	Ward.	Cases.	Deaths
West ...	3	...	1	Great Lever ...	7 ... —
Halliwell ...	7	...	2	Tonge ...	11 ... 2
Derby ...	12	...	1	Astley Bridge ...	— ... —
Bradford ...	4	...	1	Smithills ...	— ... —
Rumworth	9	...	2	Hulton ...	1 ... —
East	3	...	—	Darcy Lever-cum-Brightmet ...	6 ... 1
Church	3	...	1	Deane-cum-Lostock	4 ... 1
North	—	...	—	Heaton ...	1 ... —
Exchange	—	...	—		

There was no undue incidence of the disease either by milk or shell-fish but 5 cases occurred amongst colliers, 2 in the Pretoria Pit, 2 in Fogg's Pit, and 1 in Victoria Pit.

There were only 12 deaths from the disease as compared with an average of 36 for the last ten years, and 33 in the year 1909. The death rate per thousand inhabitants was '06, the lowest recorded in the Borough and less than a third of the average for the last ten years. The death rate per cent. of cases which was 16·9 did not differ much from the average. The heaviest incidence was during the months of October, November, and December, but even at that period it was much below the average.

It is especially satisfactory to record this reduction as it is coincident with the substitution of water-closets for the insanitary privy-middens and pails, for as has been noticed in these reports for many years the incidence of this disease is much heavier on this type of convenience.

TABLE VI.
WEEKLY NOTIFICATION OF SCARLET, ENTERIC, AND
DIPHThERIA, 1910.

Week.	1st Quarter.			2nd Quarter.			3rd Quarter.			4th Quarter.		
	Scarlet Fever.	Enteric Fever.	Diphtheria and Memb. Croup.	Scarlet Fever.	Enteric Fever.	Diphtheria and Memb. Croup.	Scarlet Fever.	Enteric Fever.	Diphtheria and Memb. Croup.	Scarlet Fever.	Enteric Fever.	Diphtheria and Memb. Croup.
1	17	2	1	11	1	1	18	...	...	15	5	3
2	16	...	1	20	1	4	12	...	2	17	...	1
3	24	2	2	28	...	...	33	1	4	18	2	5
4	22	3	1	20	...	1	31	1	2	16	...	1
5	20	1	2	14	1	4	15	1	2	17	2	3
6	15	...	3	14	...	1	25	4	2	13	5	4
7	13	2	2	18	1	3	24	1	1	14	4	7
8	12	1	2	23	1	...	13	1	1	15	2	4
9	9	1	3	18	...	...	22	2	...	14	2	5
10	23	...	1	20	1	4	14	2	2	18	2	1
11	18	1	1	19	1	...	17	...	1	12	4	4
12	11	...	2	20	...	...	24	1	4	8	2	5
13	19	2	...	11	...	...	6	2	1	20	3	2
Total ...	219	15	21	236	7	18	254	16	22	197	33	45

TABLE VII.
DISTRIBUTION OF NOTIFIED DISEASES IN WARDS, 1910.

WARDS.	Small-pox.	Scarlet Fever.	Enteric Fever and Continued Fever.	Diphtheria and Memb. Croup.	Puerperal Fever.	Erysipelas.	Total.	Rate per 1000.
West	82	3	11	1	8	105	3·6
Halliwell	125	7	6	...	8	146	5·7
Derby	102	12	16	2	17	149	7·0
Bradford	104	4	8	1	6	123	5·8
Rumworth	23	9	12	1	7	52	5·2
East...	35	3	2	...	3	43	4·4
Church	51	3	8	1	6	69	8·0
North	37	...	1	...	6	44	5·3
Exchange	43	...	2	...	4	49	12·0
Old Borough...	602	41	66	6	65	780	5·7
Great Lever	78	7	1	...	7	93	7·4
Tonge	29	11	9	...	2	51	4·4
Astley Bridge	88	...	4	...	2	94	10·2
Smithills	34	...	3	...	1	38	6·2
Hulton	26	1	10	1	4	42	7·2
Darcy Lever-c-Breightmet	...	23	6	3	...	4	36	10·4
Deane-cum-Lostock	25	4	9	1	5	44	13·4
Heaton	1	1	1	...	1	4	1·8
Added Area	304	30	40	2	26	402	7·4
Extended Borough	906	71	106	8	91	1182	6·2

Cases and Deaths from Scarlet Fever per 100.000 inhabitants.

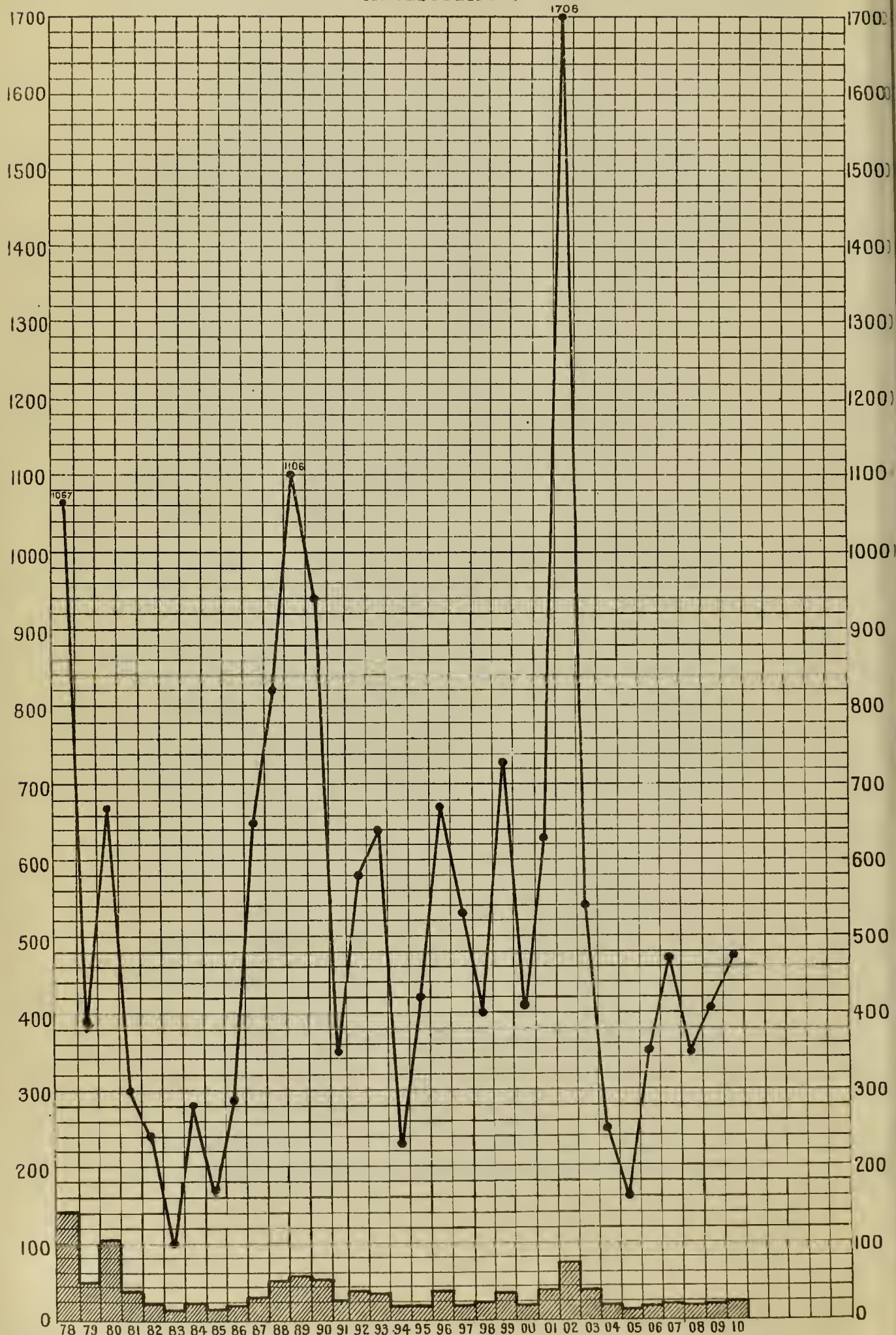


TABLE VIII.

INFECTIOUS DISEASES NOTIFIED FROM 1880 TO 1910.

Year	Small-pox	Scarlet	Diphtheria, Membr Croup	Enteric	Continued	Typhus	Puerperal	Cholera	Erysipelas	Relapsing	Total	Rate per 1000 of pop'n	Total admitted to Hospital
1880...	18	702	5	102	13	17	3	...	...	...	860	8.0	...
1881...	9	320	5	98	1	24	10	2	...	..	469	4.4	...
1882...	267	259	19	77	...	30	3	...	...	...	655	6.1	...
1883...	3	193	9	75	4	9	3	1	...	...	207	1.9	...
†1884...	13	303	11	152	1	6	3	4	...	...	493	4.5	62
1885..	6	186	8	57	...	...	4	...	..	...	261	2.3	120
1886	...	322	18	60	...	3	3	...	...	...	406	3.6	208
1887..	...	721	22	107	...	2	1	...	...	...	853	7.5	296
1888...	11	924	51	180	...	2	4	...	...	...	1172	10.3	289
1889	4	1256	92	125	2	16	...	...	...	...	1495	13.0	309
1890.	...	1071	74	101	1	15	4	..	...	...	1266	10.9	273
1891..	...	411	93	145	...	16	5	...	...	...	670	5.8	113
1892..	1	683	112	97	1	2	8	1	...	...	905	7.7	158
1893	44	747	123	170	...	2	4	...	...	...	1090	9.2	202
1894...	2	267	25	117	1	..	16	...	...	...	428	3.6	136
1895...	10	495	34	237	1	...	7	...	...	...	784	6.5	168
1896...	1	816	29	186	...	...	10	...	...	...	1042	8.6	293
1897...	...	645	17	125	...	...	8	...	..	...	795	6.5	261
1898...	...	487	27	208	...	...	2	...	...	...	724	5.9	316
*1899	...	1226	52	321	...	...	12	...	...	...	1611	9.9	567
1900.	1	644	56	208	...	...	9	...	13	1	932	5.6	482
1901..	...	1066	91	219	...	...	8	..	28	...	1412	8.3	639
1902.	63	2910	202	192	4	...	14	...	71	...	3456	20.2	1266
1903.	55	971	142	178	2	..	15	...	85	...	1448	8.3	619
1904..	19	477	150	158	2	...	9	...	69	...	884	5.0	347
1905.	2	292	103	164	1	...	5	...	78	...	645	3.6	261
1906.	...	630	84	197	...	...	9	..	123	..	1043	5.7	472
1907...	...	866	79	135	...	...	18	...	89	..	1187	6.4	627
1908..	...	637	76	190	2	...	10	...	84	...	999	5.3	481
1909...	5	760	95	138	...	...	4	...	105	...	1127	5.8	560
1900 } to 1909 }	14.5	925.3	107.8	177.9	1.1	...	10.1	...	74.5	.1	1311.3	7.4	575.4
1910...	...	906	106	70	1	...	8	...	91	...	1182	6.2	625

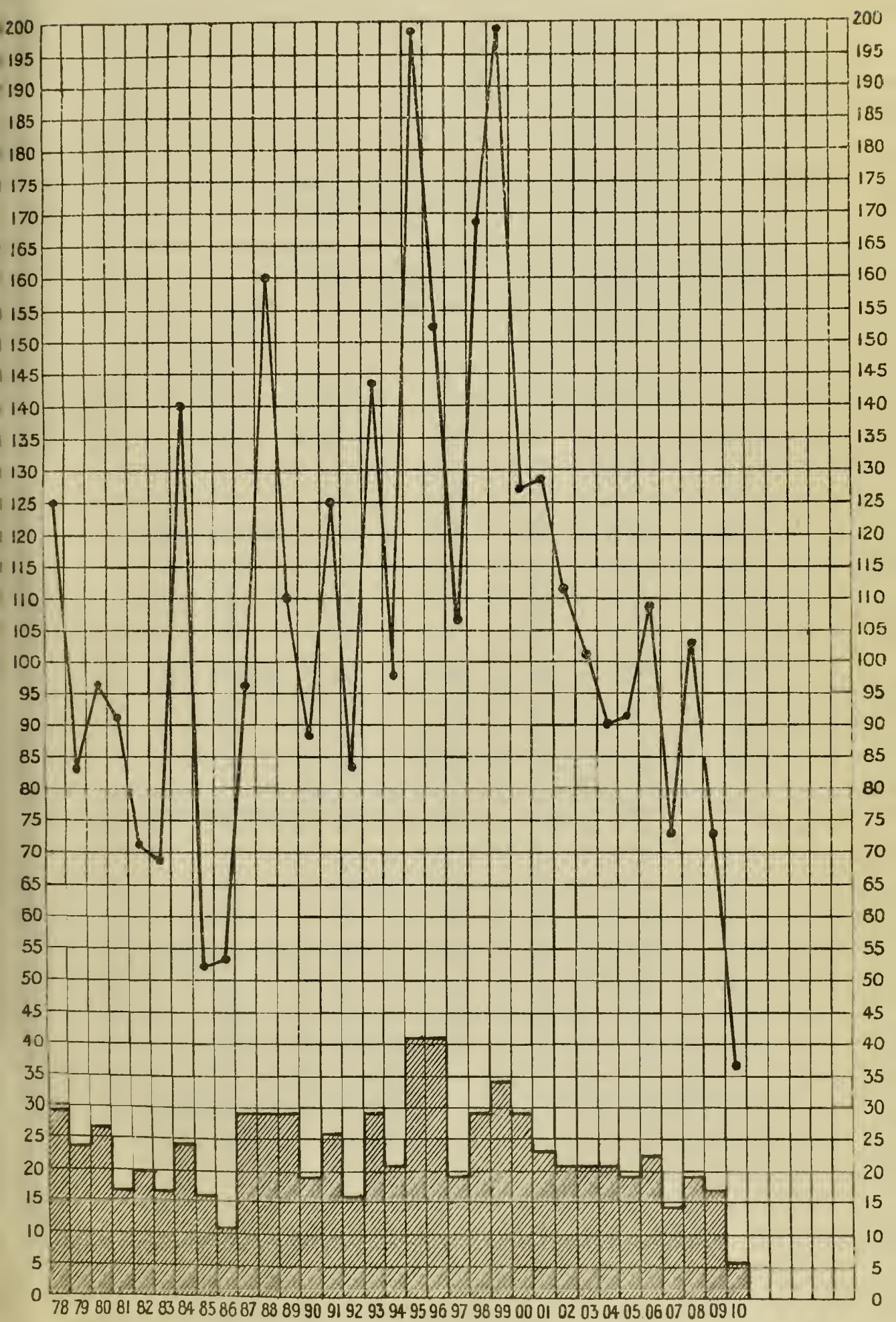
First Year Notification, 1878. † Isolation Hospital Established. * Borough Extended.

TABLE IX.

CASES OF ENTERIC FEVER REPORTED IN EACH MONTH DURING THE
LAST FIVE YEARS COMPARED WITH 1910.

Month	1905	1906	1907	1908	1909	Average	1910
January ...	22	19	15	15	17	17·6	7
February ...	12	13	4	6	20	11·0	4
March ...	15	13	11	11	10	12·0	3
April ...	6	15	8	5	8	8·4	3
May ...	8	15	4	12	10	9·8	3
June ...	3	9	10	12	5	7·8	2
July ...	11	5	8	15	1	8·0	2
August ...	11	10	18	22	7	13·6	8
September ...	19	16	13	26	7	16·2	5
October ...	19	24	21	22	15	20·2	9
November ...	17	33	15	22	28	23·0	12
December ...	21	25	8	24	10	17·6	13
Total ...	164	197	135	192	138	165·2	71

Enteric Fever. Cases and Deaths per 100.000 inhabitants.



ENTERIC FEVER IN BOLTON, 1882—1910.

Year	Cases	Case-rate per 1,000 of Population	Deaths	Death-rate per 1000 of Population	Death-rate per cent. of Cases
1882	77	·72	17	·15	22·0
1883	75	·69	17	·15	22·6
1884	152	1·39	26	·23	17·1
1885	57	·51	17	·15	29·8
1886	60	·53	12	·10	20·0
1887	107	·95	31	·27	28·9
1888	180	1·58	31	·27	17·2
1889	125	1·09	31	·27	24·8
1890	102	·88	22	·18	21·5
Av. 1881-90	103	·92	22	·19	22·3
1891	145	1·24	30	·26	20·6
1892	97	·83	19	·16	17·5
1893	170	1·44	34	·28	20·0
1894	117	·98	25	·20	21·3
1895	237	1·98	50	·41	21·0
Av. 1891-95	153	1·29	31	·26	20·4
1896	186	1·54	50	·41	26·8
1897	125	1·02	24	·20	19·2
1898	208	1·69	35	·28	16·8
1899	321	1·97	55	·33	17·1
1900	208	1·26	47	·28	22·5
Av. 1896-1900	209	1·51	42	·25	20·1
1901	219	1·29	39	·23	17·8
1902	192	1·12	36	·21	18·8
1903	178	1·02	36	·20	20·2
1904	158	·89	37	·21	23·4
1905	164	·92	34	·19	20·7
Av. 1901-05	182	1·04	36	·20	20·1
1906	197	1·09	40	·22	20·3
1907	135	·73	26	·14	19·2
1908	192	1·03	37	·19	19·2
1909	138	·77	33	·17	23·9
1910	71	·37	12	·06	16·9

Diphtheria and Membranous Group.

106 cases were notified in 100 houses, with 29 deaths, equal to a death-rate of 27·3 per cent. of cases, or ·15 per 1000 of the population. The number of cases is slightly higher than 1909, but is still below the average for the last ten years.

Of those notified only 49 were children attending school and 34 contacts of school children. 41 schools were affected: 15 had cases only, 11 had cases and contacts, and 15 contacts only. The highest number of cases in any one school was six, and the highest number of contacts four.

The age distribution was:—

Age.	No. Notified				Deaths.	
0—1	5	...	...	3
1—2	5	..	...	3
2—3	8	...	...	3
3—4	12	...	...	4
4—5	12	..	...	3
5—10	.	.	41	...	...	11
10—15	6	...	...	—
15 and upwards	17	...	...	2

109 bulbs of antitoxin were supplied on application for 54 cases to 27 medical practitioners. Each bulb contains 2,000 units.

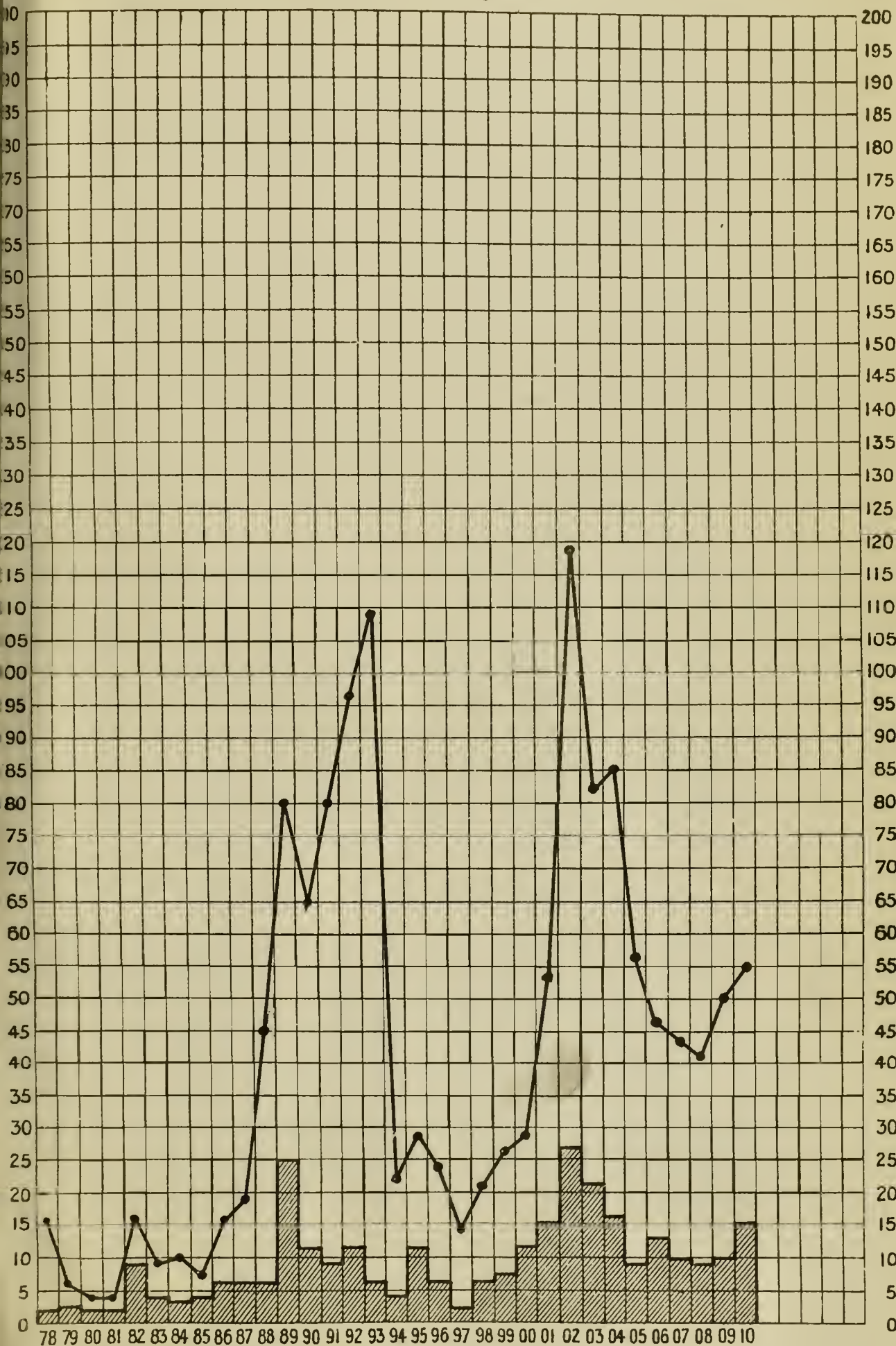
Measles, Whooping Cough, &c.

There were only 2 deaths from Measles, the biennial epidemic having occurred in 1909.

53 deaths were due to Whooping Cough.

Mumps and Chicken-pox were prevalent during the year, especially in November, but there were no deaths from either disease. Four Infants' Departments were closed for three weeks on account of Mumps, four on account of Chicken-pox, one for Whooping Cough, and one for Scarlet Fever.

Case rates and Death rates per 100,000 for Diphtheria in previous years.



Diarrhœa.—Deaths in previous years per 100,000 inhabitants.



Diarrhoea.

Only 63 deaths from epidemic summer Diarrhoea were registered equal to a death-rate of '33 per 1000 of the population.

The weekly number of deaths and the four feet earth temperature during the period of prevalence were :—

Week ending.		Deaths.		Four Feet Temperature.	
July	30	...	—	...	54'2
Aug.	6	...	3	...	54'4
,,	13	...	2	...	54'8
,,	20	...	2	...	55'6
,,	27	...	2	...	55'8
Sep.	3	...	6	...	55'3
,,	10	...	6	...	54'9
,,	17	...	9	...	54'3
,,	24	...	5	...	53'7
Oct.	1	...	5	...	53'0

Bacteriological Examination.

The following specimens were sent to the Public Health Laboratory, Owens College, Manchester, during the year for examination, and with the results as tabulated :—

Specimen.	Positive Result.	Negative Result.	Total.
Blood from Enteric Fever ...	17	51	68
Sputum from Phthisis ...	37	75	112
Swab from Diphtheria ...	8	15	23
	62	141	203

Isolation of Infectious Diseases.

The Bolton Corporation possesses two hospitals in close proximity and under one management at Deane, within the Borough, having accommodation for 100 patients for infectious diseases and it has also the right to the use of 15 beds for Small-pox patients in the Bury and District Joint Hospital Board's Hospital at Ainsworth. It also contracts for the use of 8 beds at Meathop Sanatorium for early cases of Phthisis.

The Small-pox Hospital was not used by Bolton during the year, but there were admitted to the Deane Hospitals, 546 cases of Scarlet Fever, 33 of Enteric Fever, 8 of Diphtheria, 11 of Phthisis, and 27 of other diseases.

18 persons suffering from Pulmonary Tuberculosis were treated at Meathop Sanatorium.

The deaths at the Deane Hospitals numbered 22, of these, 13 were from Scarlet Fever, 5 from Enteric Fever, 3 from Diphtheria, and 1 from other disease.

The staff during the year at the Deane Hospitals consisted of:—

1 Matron	4 Wardmaids
3 Sisters	4 Laundresses
1 Ambulance Nurse	5 Servants
3 Staff Nurses	2 Gardeners
8 Probationers	2 Porters

Two probationary nurses contracted Scarlet Fever and one Enteric Fever, during the year, and made good recoveries. There was no other case of serious illness and in all respects the health of the staff has been excellent.

No alterations have taken place in the Hospital Buildings but plans for a pavilion of 24 beds for Consumptives, and for the extension of the administrative block of the Eastern Hospital have been passed by the Local Government Board.

The Matron, Miss Webb, resigned her position and Miss Bateman, the Senior Sister, was appointed in her place.

The Committee have on several occasions visited the Hospitals and expressed their satisfaction with the cleanliness, the economical administration, and the care and sympathy displayed by the staff for the patients.

I am glad to be able to record my appreciation of the devotion and the harmonious co-operation of the staff for the benefit of those entrusted to their care. I am especially indebted to Dr. Moffatt, and the Matron, for their loyal assistance, and unremitting attention to the patients.

ADMISSIONS AND DEATHS OF SCARLET AND ENTERIC FEVER
PATIENTS IN PREVIOUS YEARS.

Year.	SCARLET FEVER.			ENTERIC FEVER.		
	Admitted.	Deaths.	Death-rate per cent.	Admitted.	Deaths.	Death-rate per cent.
1884—1886	317	5	1·5			
1887	292	6	2·0			
1888	279	4	1·4			
1889	292	4	1·3			
1890	267	7	2·6			
1891	111	0	0·0			
1892	156	3	1·9			
1893	160	1	0·6			
1894	132	4	3·0			
1895	154	2	1·3			
1896	292	7	2·3			
1897	261	3	1·1			
1898	261	5	1·9			
1899	503	13	2·5*	64	8	12·5
1900	416	12	2·9	66	9	13·6
1901	581	13	2·2	58	13	22·4
1902	1176	25	2·2	27	2	7·4
1903	522	25	4·7	44	5	11·3
1904	275	8	2·9	53	11	20·7
1905	178	3	1·6	81	17	20·9
1906	383	3	0·7	80	11	13·7
1907	539	18	3·3	80	11	13·7
1908	378	16	4·2	93	15	16·1
1909	475	15	3·1	63	8	12·6
1910	546	13	2·3	33	5	1·1

* Very few cases of Enteric Fever were admitted before this date owing to insufficient accommodation.

Phthisis (Pulmonary Tuberculosis).

195 deaths were registered from this disease, these including all Bolton residents dying in institutions outside the Borough. It is equal to a death-rate of 1.02 per 1,000 inhabitants, slightly lower than that for 1909, but not the lowest recorded.

The age and sex distribution are shewn here :—

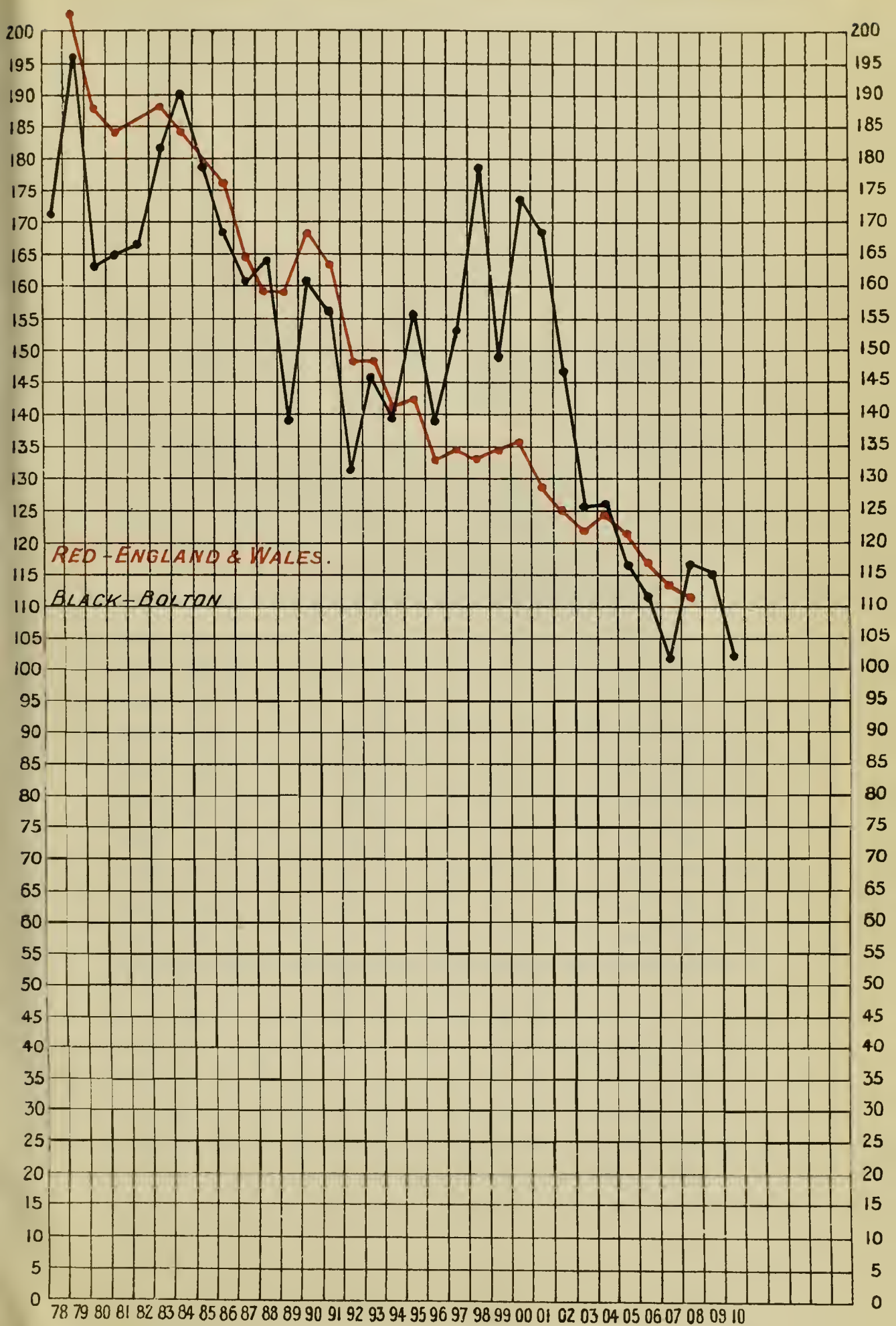
SEX.	Total	AGES							
		Under 5	5-15	15-25	25-35	35-45	45-55	55-65	65 and upwards
Male	122	2	...	11	29	35	29	13	3
Female	73	4	3	14	11	19	12	8	2
Totals.....	195	6	3	25	40	54	41	21	5

The occupations of those who died were as follows :—

Weaving	...	...	...	...	13
Spinning	...	...	...	...	17
Other Cotton Operatives	...	...	...	...	9
Bleaching and Printing	...	...	...	...	4
Metals, Machines, and Implements	...	...	...	...	26
Coal Mining	...	...	...	...	7
Buildings	...	...	...	...	7
Conveyance of Men and Goods	...	...	...	...	10
General Labourers	...	...	...	...	22
Food, Drink, and Tobacco	...	...	...	...	9
Dress, etc.	...	...	...	...	1
Commercial or Business Clerks	...	...	...	...	1
Domestic Service	...	...	...	...	8
Household Work	...	...	...	...	33
School Children...	...	...	...	...	2
Miscellaneous Occupations	...	...	...	...	12
No Occupation or Occupation unknown	...	...	...	...	14

Since 1900 there has been a marked decrease in the death-rate from this disease (see Chart), and also in all forms of Tuberculosis, so that Bolton at present compares favourably not only with manufacturing towns but also with England and Wales.

Phthisis – Deaths per 100,000 inhabitants in previous years.



DEATHS FROM PULMONARY TUBERCULOSIS IN BOLTON IN
PREVIOUS YEARS.

Year	Residents in Public Institutions out of Borough				Public Institu- tions in Borough		Private Houses	Total	Rate
	Work- house	Lunatic Asylums		Others	Infirmary				
		Work- house Cases	Other Cases		Resi- dents	Non- Resi- dents			
1901	43	2	4	...	...	...	236	285	1.68
1902	36	2	11	1	2	...	201	253	1.47
1903	34	3	6	1	1	1	173	218	1.25
1904	20	4	8	...	...	...	189	221	1.25
1905	22	4	10	...	3	...	171	210	1.17
1906	19	1	5	...	2	...	175	202	1.11
1907	40	6	5	...	...	...	135	186	1.01
1908	52	...	10	...	1	...	153	216	1.16
1909	53	2	6	...	3	...	152	216	1.15
1910	47	...	7	1	...	...	140	195	1.02

NOTIFICATION.

246 first notifications have been received in accordance with Section 52 of the Bolton Corporation Act, 1905, this being next to the highest number reached since the Act came into force. Of these 219 were received from Private Practitioners, and 27 from Institutions.

The occupations of those notified as suffering were as follows :—

Cotton Spinning	...	...	...	29
Cotton Weaving	...	...	...	17
Bleaching and Printing	...	...	...	4
Metals, Machines and Implements	...	...	...	29
Coal Mining	...	...	...	6
Building Construction	...	...	...	6
Painters, Decorators, etc.	...	...	...	4
Conveyance of Men and Goods	...	...	...	8
General Labourers	...	...	...	15
Food, Drink and Tobacco	...	...	...	12
Dress, etc.	...	...	...	10
Commercial or Business Clerks	...	...	...	7
Domestic Service	...	...	...	9
Household Work	...	...	...	44
School Children	...	...	...	17
Miscellaneous Occupations	...	...	...	13
No Occupation or Occupation unknown	...	...	...	16

The details as to notification both during the periods of voluntary and compulsory notification are given below.

VOLUNTARY NOTIFICATION.

Year.		Institutions.		Medical Practitioners.		Total.
1902	(6 mos).	14	..	66	..	80
1903	...	17	...	75	...	92
1904	...	38	...	56	...	94
1905	(9 mos).	11	...	43	...	54

COMPULSORY NOTIFICATION.

1905	(3 mos).	..	19	...	76	...	95
1906	...	...	37	...	218	...	255
1907	...	...	45	...	143	...	188
1908	...	...	36	...	166	...	202
1909	...	...	59	...	181	...	240
1910	...	...	27	...	219	...	246

SANATORIUM TREATMENT.

Following on compulsory notification which came into operation in October, 1905, the Sanitary Committee contracted with the Governing Board of Meathop Sanatorium for the use of 8 beds at that Institution. The first Bolton patient was admitted in July, 1906, and since that date the following have been admitted and discharged. For various reasons it is almost impossible to secure cases in the first stage of the disease, and in fact less than 10 per cent were in that stage.

	1906.	1907.	1908.	1909.	1910.	Total.
Total Admitted and Discharged } 3 ... 12 ... 21 ... 26 ... 18 ... 80						
Arrested ...	1 ...	7 ...	9 ...	12 ...	9 ...	38
Improved ...	1 ...	— ...	9 ...	8 ...	4 ...	22
Slightly Improved	— ...	3 ...	— ...	1 ...	1 ...	5
Not Improved ...	1 ...	2 ...	3 ...	5 ...	4 ...	15

The Wilkinson Sanatorium on the outskirts of Bolton, which was opened in April, 1910, also treats patients in the incipient stage. It has accommodation for 24 patients.

The Bolton Guardians have the use of two beds at Meathop Sanatorium for early cases, and are making special arrangements at the Workhouse Infirmary for treating patients in all stages of the disease.

During the year an enquiry into the application of the Corporation to borrow £6000 for a consumptive pavilion was held.

PREVENTIVE MEASURES.

In my last year's report I gave a short history of the preventive measures adopted in Bolton during the last five years. It was in substance a summary of the report made at the request of the Local Government Board as to the operation of Section 52, Bolton Corporation Act, 1905, which sanctioned compulsory notification of pulmonary tuberculosis. The period for which this was granted expired on August 10th, 1910, and after due enquiry the Section was re-enacted by Provisional Order for a further period of ten years.

The routine after the receipt of the notification is for a visit to be made to the house by the sanitary inspector and information to be obtained as to the health of the occupiers, the history of Phthisis in the family, and sanitary conditions and sanitary history of the house.

Where no medical man is in attendance verbal and written advice is offered, and the patient is directed how best to obtain suitable treatment. In case sanatorium treatment is sought through the Public Health Department an application form and medical certificate are forwarded to the Medical Officer of Health who examines the patient and determines whether the case is suitable for admission to the Meathop Sanatorium.

The Corporation also undertakes free of charge to examine the sputum of suspected cases, and has power to compel disinfection of the premises after death or removal.

During the year a Tuberculosis Exhibition was held in Bolton under the auspices of the National Society for the Prevention of Tuberculosis. A large number of persons visited the Exhibition, and lectures were delivered by local medical men on the cause, prevention, and cure of the disease. Much useful information was given and distributed, and it is hoped that public opinion has been aroused and individual effort stimulated.

So far as present knowledge and experience extend the measures which are recognised both by experts and enthusiasts to be necessary are :—

1. Compulsory Notification.
2. Dispensary for advice and supervision.
3. Sanatoria for curable cases.
4. Home for advanced cases.
5. Improvement of housing conditions.
6. Teaching of personal hygiene.

In Bolton a dispensary separate and distinct from existing institutions is unnecessary, and the other measures recommended are already in operation, although they could be extended with considerable advantage. For four years the Bolton Corporation has provided eight beds for early cases at the Meathop Sanatorium, and during the year the accommodation in the Borough for such cases has been trebled by the opening of the Wilkinson Sanatorium with 24 beds. But still the difficulty is to get cases in the early stage when sanatorium treatment is so effective. Not 10 per cent of those applying for treatment through the Public Health Department are in the early stage : in consequence the beds are usually filled with advanced cases who,

although they shew marked improvement after a lengthy stay in the sanatorium, frequently relapse when they return to their own town and even light work. The difficulty arises from the fact that the great majority of the sufferers are too poor to leave their work, or even to get proper medical treatment, again proving what has been so often pointed out that poverty is one of the most potent factors in the production of phthisis. If therefore the poor consumptives are to have a chance of benefitting by the remedial measures provided it is absolutely necessary that adequate assistance be provided for the family of the consumptive during his absence from home while undergoing sanatorium treatment.

The measures which will certainly prove most efficient at the present juncture are :—

1. Compulsory notification.
2. Suitable sanatorium accommodation for the curable, and hospital isolation for the advanced.
3. Adequate provision for the families of consumptives.

To these may be added the improvement of the housing conditions, which may prove in the end to be the most economical of all, and the teaching of personal hygiene.

With regard to other preventive measures now in operation in Bolton, it will be noticed that a whole time Veterinary Inspector has been appointed during the year. He has already carried out a special inspection of milch cows, and out of a total of 3756 examined he has found only one suffering from tuberculosis of the udder, and three from other forms of tuberculosis. This, as he remarks in his report, shews a remarkably small percentage. Compulsory notification of tuberculosis of the udder in cows has been in force since 1901. With regard to the condemning of carcasses affected with tuberculosis, a return recently made shews that the great majority of the large towns follow the recommendation of the Royal Commission of 1898; that is to say, Bolton's method of dealing with them is not less rigorous than those in Liverpool, Manchester, Leeds, Bradford, Sheffield, Glasgow, Cardiff, etc. On the other hand there are several large towns where the recommendations of the Commission are only partially carried out.



SECTION III.

Sanitary Work.

Abstract of Sanitary Work.

PLACES UNDER INSPECTION :—

Common Lodging-houses	...	...	...	...	...	61
Houses Let-in Lodgings	...	...	...	...	...	84
Factories	...	...	...	...	...	355
Factory Chimneys	...	...	...	...	...	259
Workshops and Workplaces	...	...	...	...	...	624
Bakehouses	...	...	...	...	...	251
Public houses	...	...	...	...	...	382
Offensive Trades	...	...	...	...	...	35
Slaughter houses	...	...	...	...	...	50
Cowsheds	...	...	...	...	...	339
Milkshops	...	...	...	...	...	451
Public Sanitary Conveniences	...	...	...	...	...	18
Travelling Vans	...	...	...	...	...	100

ABSTRACT OF WORK DONE DURING 1910 :—

Complaints from Public	...	...	...	...	...	122
Nuisances Reported	...	...	...	...	...	2792
Letters Written or Verbal Notices	...	...	...	...	...	1839
Informal Notices Issued	...	...	...	...	...	981
Legal Notices Issued	...	...	...	...	...	196
Smoke Observations	...	...	...	...	...	533
Smoke Nuisances Reported	...	...	...	...	...	4
Smoke Notices Served	...	...	...	...	...	3
Smoke Prosecutions	...	...	...	...	...	1
Rooms Fumigated	...	...	...	...	...	2730
Articles Disinfected	...	...	...	...	...	4492
Articles Destroyed	...	...	...	...	...	174
Houses, etc., Limewashed	...	...	...	...	...	117
Houses Demolished	...	...	...	...	...	115
Houses Closed	...	...	...	...	...	58
Houses Made Fit	...	...	...	...	...	45
Privy Ashpits Converted into Water Closets	...	...	...	...	...	534
Privy Ashpits Demolished	...	...	...	...	...	22
Drains Reconstructed	...	...	...	...	...	302
Houses in which Rubble Drains have been Abolished	...	...	...	...	...	80
Yards Completely Flagged	...	...	...	...	...	54
Samples of Food, etc., Purchased	...	...	...	...	...	407
Samples Adulterated	...	...	...	...	...	51
Adulteration Prosecutions	...	...	...	...	...	45

Public Health and Medical Inspection Staff.

- 1 Medical Officer of Health and School Medical Officer.
- 1 Deputy Medical Officer of Health and Assistant School Medical Officer.
- 1 Public Analyst (Part time).
- 1 Veterinary Surgeon and Chief Meat Inspector.
- 1 Food and Drugs and Sanitary Inspector.
- 1 Assistant Meat Inspector.
- 5 Sanitary Inspectors.
- 5 Clerks.
- 2 Health Visitors.
- 2 School Nurses.
- 3 Ambulance Drivers and Disinfectors.
- 2 River and Urinal Cleaners.
- 10 Bath Officials.
- 5 Lavatory Attendants.
- 33 Hospital Staff (excluding Ainsworth Small-pox Hospital).

Housing of the Working Classes.

During 1910, of the unfit class of house, there were demolished 115, closed 58, and made fit 45; i.e., a total of 218; of these 71 were back-to-back, and 50 single houses.

Back-to-back and single, or 1, 2, and 3 roomed tenements :—

Year.		No. of Houses.
1891	Census Returns (1, 2, & 3 Tenements)	3051
1896	Public Health Office Enumeration	2064
1901	Census Returns	2558
1903	Public Health Office Enumeration	2473
1904	„ „ „	2355
1905	„ „ „	2292
1906	„ „ „	2257
1907	„ „ „	2184
1908	„ „ „	2044
1909	„ „ „	1909
1910	„ „ „	1788

The number of back-to-back and single houses in wards is given in Table II.

Table I. shows the work done in improving the working class houses during the last 37 years.

The amount expended, chiefly to demolitions, up to the end of 1910 was as follows :—

				£
1874-1885	...	...	...	6775
1886-1895	...	...	...	1637
1896-1905	...	...	...	7648
1906-1910	...	..	...	23330

TABLE I.

ABSTRACT OF HOUSES DEMOLISHED, CLOSED, MADE FIT OR
IMPROVED (1874 TO 1910).

Date	Demolished	Closed	Made Fit	Improved	Total
1874—1885	...	...	...	...	293
1886—1895	...	...	...	...	245
1896	23	9	10	29	71
1897	85	14	24	21	144
1898	17	11	8	...	36
1899	22	7	3	...	32
1900	59	44	8	...	111
1901	42	22	79	...	143
1902	18	18	19	...	55
1903	85	20	19	42	166
1904	52	3	46	...	101
1905	39	9	10	10	68
1906	69	17	17	...	103
1907	43	65	24	...	132
1908	124	43	43	...	210
1909	111	17	87	...	215
1910	115	58	45	...	218
Total ...	904	357	442	102	1805

TABLE II.

ENUMERATION OF BACK-TO-BACK AND SINGLE HOUSES IN WARDS,
1910.

Ward.	Back-to-Back	Single.	Total, 1910.	Total, 1903.
East	216	70	286	592
Derby	223	33	256	375
Bradford	326	58	384	457
Exchange	132	97	229	314
West	103	75	178	211
Church	101	25	126	135
Halliwell	31	41	72	83
North	4	4	8	14
Rumworth	14	4	18	19
Astley Bridge	26	40	66	96
Smithills	26	32	58	58
Darcy Lever-cum- Brightmet	8	24	32	42
Tonge	34	39	34	34
Deane-cum-Lostock...	2	...	41	43
Total	1246	542	1788	2473

Closet Accommodation.

During the year 1910 there were 534 conversions of old privy-middens or pails into water closets, and 22 demolitions of the same type of closet in connection with insanitary property.

From 1899—1910 inclusive, 6959 closets have been converted at a cost to the Corporation of £13,813, and replaced by water-closets, and 272 have been demolished.

In public-houses during the same period 107 water-closets were added for customers; in the Public Elementary Schools 94 have been provided, and 923 fresh-water-closets and 129 pails in factories and workshops, where also 33 cesspools were abolished.

That is in twelve years a total of 8083 closets have been provided on the water-carriage system, in addition to those provided in new houses, viz., 6776.

The present number of privy-middens and pails as compared with those of 1898 are:—

District.	Privy-middens.		Pails.	
	1898	1910	1898	1910
Old Borough ...	12740	7449	6782	6397
Added Area ...	7581	6149	22	29
Whole Borough ..	20321	13598	6804	6426

In the Old Borough in 1898 the numbers were:—

Privy-middens and Pails	...	...	...	19522
Water-closets	...	...	...	7587

At present the numbers are:—

Privy-middens and Pails	...	...	...	13864
Water-closets	...	...	...	15158

Formerly in the Old Borough 75 per cent. were on the dry system and 25 per cent. on the water-carriage system, now 47·7 per cent. are on the dry system and 52·3 per cent. on the water-carriage system.

CLOSETS IN PUBLIC-HOUSES.

Of the 382 public-houses in the Borough, 377 have two or more closets and five have only one closet. The figures for 1909 were 381 with two or more closets and 7 with one closet. Of these latter one has provided sufficient accommodation and the other one has been closed.

During the year two privy-middens and two waste water-closets were converted into fresh-water closets, and two fresh-water closets were added to make up an insufficiency, *i.e.*, total six fresh-water closets.

Of the five public-houses having only one closet :—

Four are on the privy-midden system (Added Area).

One is on the fresh-water system (Old Borough).

The 377 public-houses having two or more closets are divided up as follows :

264 have two or more water-closets.

74 have at least one-water closet and one privy-midden or pail.

39 have two closets on the dry system (privy-midden or pail).

In other words 70 per cent. are wholly on the water-carriage system, 89·6 per cent. have at least one water-closet, and 10·4 per cent. are on the dry system.

During the last twelve years (1899—1910) 305 fresh-water closets and 10 waste-water closets have been provided generally in place of insanitary privy-middens and pails in public-houses.

TABLE III.

CLOSET ACCOMMODATION, 1910.

	No. of Closets Converted or Demolished, 1910.				Conversions in Old Houses and Additions in New Houses, 1910.				Present Closet Accommodation, 1910.				Per Cent. on	
	P.M.	Pail.	W.W.C.	F.W.C.	P.M.	Pail.	W.W.C.	F.W.C.	P.M.	Pail.	W.W.C.	F.W.C.	Dry System.	Water System.
Old Borough ...	330	37	39	12	...	...	17	520	7449	6397	11000	4158	47.7	52.3
Great Lever ...	15	...	3	...	...	...	49	84	1349	...	1119	320	48	52
Tonge ...	39	...	...	...	...	...	...	88	1459	...	786	165	60	40
Astley Bridge ...	82	1	...	...	...	4	6	120	985	10	505	505	49	51
Smithills ...	13	...	...	...	...	...	15	96	458	3	728	318	31	69
Hulton ...	34	...	...	...	...	...	15	79	590	...	596	142	44	56
Darcy Lever-cum- Brightmet ...	...	...	...	...	...	...	10	10	652	...	183	82	71	29
Deane-cum-Lostock ...	3	...	...	...	2	...	4	26	419	4	213	114	56	44
Heaton ...	2	...	...	...	...	...	...	29	227	12	152	324	33	67
Extended Borough	518	38	42	12	2	4	116	1052	13598	6426	15282	6128	48	52

Common Lodging Houses.

There are now 61 registered houses in Bolton, the same number as last year. During the year two houses were closed, one demolished, and three placed on the register. There is accommodation for 1599 persons.

They are distributed thus :—

Ward.			Houses.		Rooms.		Beds.
Exchange	...	...	27	...	134	...	583
East	...	...	31	...	162	...	915
Church	...	...	2	...	14	...	58
Derby	...	...	1	...	10	...	43

All notices from the Sanitary Inspectors have been complied with, and there has been no contravention of the bye-laws.

Accommodation for the sexes :—

Description.			Houses.	Males.	Females.	Couples.
Males only...	...	...	42	1218	—	—
Couples only	...	...	2	—	—	9
Females and Couples	...		1	—	9	4
Males and Couples	...		8	113	—	21
Males, Females, and Couples			8	89	44	42
			—	—	—	—
			61	1420	53	76

Houses Let-in-Lodgings.

During the year 1910, 6 houses have been placed on the register, and two houses closed, thus making a total of 84 registered houses in the Borough. They are distributed in the wards thus :—

Ward.			Houses.	Rooms.	Accommodation.
Exchange	...	...	49	153	392
East	...	...	21	73	189
Derby	...	...	14	61	180

The rooms let by these houses are as follows :—

2	houses	let	8	rooms.
1	house	lets	7	„
6	houses	let	6	„
6	„	„	5	„
28	„	„	4	„
13	„	„	3	„
18	„	„	2	„
10	„	„	1	„

Canal Boats.

No Boats that were used as dwellings came within the district of this Authority during the year 1910.

Vans, Tents, &c.

10 vans situated in Morgan Street, Astley Bridge, 26 vans on the Wholesale Market and Bridge Street were inspected in June ; 49 vans on the Wholesale Market, and Victoria Square, and 15 at Morgan Street during Christmas and New Year.

Factories.

26 complaints were received from Factory Inspectors during 1910, of which 12 referred to insufficient and unsuitable closet accommodation, and 14 to insufficient means of escape in case of fire.

During the year 55 fresh-water closets were provided in 15 factories in place of old and insanitary closets or as additions. In the twelve years 1899-1910, there have been provided 923 fresh-water closets and 129 pails.

Comparison of closet accommodation in factories in 1900 with that of 1910 :—

Year.	No. of Factories.	F.W.C.	Pails.	P.M. Type.	Cesspools.
1900	260	1525	194	298	33
1910	355	2351	197	84	—

Workshops and Workplaces.

11 complaints were received from Factory Inspectors during 1910, referring to cleansing, lime-washing, insufficient and unsuitable closet accommodation, and defects. The workshops, including bakehouses and laundries, number 875, the employees, 1899 males, and 1453 females.

The number and character of trades in workshops are :—

Trade.	No. in Trade.	Trade.	No. in Trade.
Bakers	251	Drapers	5
Boot and Clog Makers ...	113	Cycle Makers	5
Dressmakers	103	Chemists	5
Millinery, etc.	59	Rag Sorters	5
Tailors, etc.	49	Printers	4
Joiners, etc.	23	Skip Makers	4
Tinplate Makers	17	Funeral Furnishers ...	4
Cabinet Makers	16	Athletic Goods	3
Ice Cream Manufacturers ...	15	Paper Dealers	3
Confectioners	14	Leather Dealers	3
Plumbers	14	Bedding	3
Saddlers	11	Umbrella Makers	3
Stocking Knitters	10	Tarpaulin Makers ..	3
General Smiths	9	Tripe Works	3
Watch and Clock Makers ...	8	Window Blind Makers ...	3
Laundries	8	Coach Builders	3
Shirtmakers, etc.	8	Picture Framers	2
Coopers, etc.	7	Painters	2
Horse-shoeing	7	Sign Writers... ..	2
Cotton-waste Manufacturers	7	Photographers	2
Wheelwrights	6	Bookbinders	2
Ironmongers	6	Clog Iron Makers	1
Chemical Works	6	Pickle Makers	1
Brush Makers	6	Brass Founders & Finishers	1
		Miscellaneous	30

Bakehouses.

There are at present on the register 251 bakehouses, fourteen new ones having been added during the year, and seven closed.

Of these 24 are underground and certified in accordance with Section 99 of the Factories and Workshops Act, 1901.

FACTORY AND WORKSHOP INSPECTION.—I. INSPECTION.

Premises.	Number of		
	Inspections	Written Notices	Prosecutions
Factories (including Factory Laundries) ...	305	15	...
Workshops (including Workshop Laundries)...	664	31	...
Workplaces (other than Outworkers' premises included in Part 3 of this Report) ...	84	7	...
Total	1053	53	...

2. DEFECTS FOUND.

Particulars	Number of Defects			Number of Prosecutions
	Found	Remedied	Referred to H.M. Inspector	
<i>Nuisances under the Public Health Acts :—</i>				
Want of cleanliness	53	53	...	...
Want of ventilation	9	9	...	...
Overcrowding... ..	5	5	...	...
Want of drainage of floor	7	7	...	...
Other nuisances	17	17	...	...
Sanitary accommodation {	insufficient ..	14	13	...
	unsuitable or defective ..	25	27	...
	not separate for sexes ...	4	4	...
<i>Offences under the Factory and Workshop Act :—</i>				
Illegal occupation of underground bake-house (s. 101) ... ..	...	...	...	...
Breach of special sanitary requirements for bakehouses (ss. 97 to 100)	14	14	...	...
Other offences (excluding offences relating to outwork which are included in Part 3 of this Report) ... ..	...	...	...	...
Total	148	149	...	...

FACTORY AND WORKSHOP INSPECTION.—3. HOME WORK.

<i>List of Outworkers (s. 107):—</i>						Number of	
						Lists	Outwork'rs
Lists received twice in the year						30	156
List received once in the year						1	2
Address of out- workers {						forwarded to other Authorities ...	8
						received from other Authorities ...	2
Inspection of outworkers' premises						124	
<i>Home work in unwholesome or infected premises:—</i>						Wearing Apparel	Other
Notices prohibiting home work in unwholesome premises (s. 108) ... ..						...	...
Cases of infectious disease notified in home workers' premises						5	...
Orders prohibiting home work in infected premises (s. 110) ... ..						...	...

4. REGISTERED WORKSHOPS.

<i>Workshops on the Register (s. 131) at the end of the year:—</i>						Number
Important classes of workshops, such as workshop bakehouses may be enumerated here.	{ Bakehouses, including underground				...	251
	{ Other Workshops				... ..	624
Total number of Workshops on Register						875

5. OTHER MATTERS.

Class						Number	
<i>Matters notified to H.M. Inspector of Factories:—</i>							
Failure to affix Abstract of the Factory and Workshop Act (s. 133)						4	
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshops Act (s. 5) ...						Notified by H.M. Inspector	23
						Reports (of action taken) sent to H.M. Inspector...	23
Other (Fire Escapes)						14	
<i>Underground Bakehouses (s. 101):—</i>							
Certificates granted during the year ... ..						...
In use at the end of the year						24	

Cowsheds, Dairies, and Milkshops.

There are now 158 occupiers of farms with 339 cowsheds. Of these farms 131 are satisfactory, 24 are fairly satisfactory, and three are unsatisfactory. During the year improvements in the ventilation, lighting, etc., were carried out in several cowsheds, and three farms, including an unsatisfactory one, were closed.

It will be seen in another part of this report that the Veterinary Inspector visited a number of the farms in the Borough and examined 3756 cows.

The registered milk sellers in the Borough number 451.

Offensive Trades and Slaughterhouses.

Two premises used as chemical works were given up during 1910, two slaughterhouses—one in Exchange Ward and one in East Ward—were demolished, one closed in Bradford Ward, and one registered in Exchange Ward.

TABLE IV.
OFFENSIVE TRADES AND SLAUGHTERHOUSES.

Trade.	Added Area.	West.	Halliwell.	Bradford.	Derby.	East.	Church.	North.	Rumworth.	Exchange.	Total.
Fellmonger, Tanner and Leather Dresser ...	...	1	...	1	...	...	...	...	...	...	2
Fellmonger and Tanner Leather Dresser and Roller ...	...	...	...	...	...	1	...	...	...	...	1
Hide and Skin Depot ...	...	...	...	...	...	...	1	...	...	1	2
Knackers' Yard ...	...	...	...	...	...	...	1	...	...	...	1
Blood Boiler ...	...	...	...	1	...	...	1	...	...	...	2
Tallow Melter ...	...	...	...	...	...	...	...	...	...	1	1
Chemical Works ...	1	...	...	...	...	1	1	...	...	...	3
Tar and Oil Distillers ...	...	...	...	...	...	...	2	...	...	...	2
Muriatic Acid Works ...	1	...	...	...	...	...	...	...	...	...	1
Tar and Sulphate of Ammonia Works... ..	1	...	...	...	...	...	...	...	...	...	1
Tripe Boiler ...	1	...	...	3	...	2	2	...	...	...	8
Brick Works ...	6	...	1	...	...	...	...	...	1	...	8
Soap Works ...	1	...	...	...	...	...	...	...	...	...	1
Slaughterhouses ...	9	4	3	20	2	2	3	1	1	5	50
Total	20	5	4	25	2	7	11	1	2	8	85

16 of those in Bradford Ward constitute the Bolton Corporation Abattoirs.

Smoke Abatement.

The summary for the year 1910 is as follows :—Observations 533, nuisances reported 4, notices served to abate 3, prosecution 1.

Three out of the 259 firms are on the “ black list ” and during the year have been served with notice to abate. One of the firms was served with notice and also prosecuted.

An inspection of the table in which the chimneys are arranged in classes shows that 140, *i.e.*, more than half the factory chimneys in the Borough emit black smoke in less quantities than one minute in the half-hour, and there ought to be no difficulty in getting all the others to behave in the same way, especially as 58 of these have no difficulty in keeping their chimneys practically smokeless.

TABLE V.

CHIMNEYS UNDER OBSERVATION, ARRANGED IN CLASSES, 1910.

Class.		Districts.						Total.
		1	2	3	4	5	6	
1	No. of Chimneys that have emitted practically no black smoke in $\frac{1}{2}$ hour's observation...	10	11	12	7	15	3	58
2	No. of Chimneys that have emitted under 1 minute of black smoke in $\frac{1}{2}$ hour's observation ...	11	13	10	29	14	5	82
3	No. of Chimneys that have emitted 1 minute but less than 2 minutes of black smoke in $\frac{1}{2}$ hour's observation ...	16	18	25	7	35	15	116
4	No. of Chimneys that have emitted 2 or more minutes of black smoke in $\frac{1}{2}$ hour's observation ...	1	...	2	...	...	...	3
	TOTAL ...	38	42	49	43	64	23	259

Animals and Food Inspection.

(W. H. BRIDGE, M.R.C.V.S.)

MEAT AND FOOD INSPECTION.

No alterations have been made during the past year in the law affecting the inspection of meat and food.

The Acts under which the work is carried out are as follows :—

The Public Health Act, 1875, Sec. 116 to 119.
 The Public Health Act Amendment Act, 1890, Sec 28.
 The Bolton Corporation Act, 1872, Sec. 102.
 The Public Health (Regulations as to Food) Act, 1907.
 The Contagious Diseases (Animals) Act, 1894 to 1903.
 The Food and Drugs Act, 1875 to 1907.

GENERAL INSPECTIONS.

Beasts...	...	...	...	...	...	6448
Sheep and Lambs	...	...	...	...	...	21524
Swine ...	...	...	...	...	...	8155
Calves .	...	...	..	...	...	605
Store Cattle	...	...	...	...	...	2700
Slaughter-houses	...	...	...	...	...	906
Markets and Fairs	...	...	...	...	...	300
Railway Sidings	...	...	...	...	...	126
Shops ...	...	...	...	...	...	1012
Farms ..	...	...	...	...	...	245

During the past year there has been a large increase in the number of carcasses that have been dealt with by your Inspector. The number for the year 1909 was 163, but for the past year the number has reached a total of 344.

This improvement has been largely brought about by closer inspection and insisting upon every diseased animal of every description being reported to the Public Health Department.

CARCASSES FOUND TO BE AFFECTED WITH DISEASE.

No.	Disease.	Cows.	Bulls.	Heifers.	Bullocks	Calves	Sheep	Pigs	Whole Carcases destroyed.	Parts & Organs. destroy'd
196	Tuberculosis	187	3	6	...	...	...	...	49	147
22	Gastric Impaction...	20	...	2	...	...	...	...	2	...
25	Traumatic Inflammat'n	17	3	2	...	...	...	3	2	18
5	Dropsy ...	3	...	...	...	2	...	...	4	...
5	Strangulation	2	...	...	...	...	3	...	2	...
8	Septic Arthritis ...	5	1	2	...	...	...	...	2	...
1	Quarter ill ...	...	...	1	...	...	...	...	1	...
11	Parturient Apoplexy ...	11	...	...	...	...	...	...	2	...
5	Pneumonia ...	3	...	2	...	...	...	...	2	...
1	Immaturity ...	...	...	...	...	1	...	...	1	...
4	Anæmia ...	2	...	1	...	1	...	...	...	...
3	Cirrhosis of Liver...	3	...	...	...	...	...	...	...	...
28	Accidental Causes ...	9	5	4	4	3	2	1	...	...
30	Suspected Animals ...	25	...	2	3	...	...	...	...	...
344		287	12	22	7	7	5	4	67	165

It may be interesting to point out the different sources of origin of the 196 carcasses affected with tuberculosis.

From Farms inside the Borough	...	...	49
„ „ outside the Borough	...	...	68
„ Salford Market ...	...	...	35
„ Preston Market ...	...	...	27
„ Liverpool Market	...	...	17

These figures show that notwithstanding by far the greater number of animals slaughtered for human food in the Borough are bought from the public markets, the percentage of animals affected with tubercular disease is much smaller than from those obtained at the farm situate in and immediately outside the Borough.

As far as possible all animals and carcasses passing through the Public Abattoirs, Slaughter-houses, Markets, and Railway Sidings have been inspected before and after slaughter.

There has been no legal seizure of food during the year. The majority of cattle dealers and butchers show a commendable willingness to surrender any meat considered by the Inspector to be unfit for food.

Complaint having been made at the Public Health Office with regard to the illegal slaughtering of swine on the farms, printed notices have been issued to all the farmers warning them against the practice and it is hoped that they may have the desired effect.

An important prosecution was instituted against two local butchers for misrepresenting mutton as autumn lamb. The cases were allowed to be withdrawn on payment of costs and an undertaking not to offend again.

OTHER FOOD DESTROYED.

Fish	...	...	...	...	...	12 cwt.
Shellfish	...	..	...	...	...	4½ "
Fowls	...	...	...	...	...	15
Rabbits...	...	...	...	...	...	264.
Eggs	...	...	...	...	...	420.
Trotters	...	...	...	...	...	750.
Grapes...	...	...	...	...	...	1 cwt.

INSPECTION OF MILCH COWS.

Special attention has during the year been given to the inspection and examination of the dairy cattle in the Borough with a view to detecting any abnormal conditions of the udder, particularly that of tubercle, and adopting the tuberculin test in suspicious cases.

Attention has also been given as regards the cleanliness of the cattle.

Total number of cows examined	...	...	3756
No. with one quarter of the udder nonsecreative			41
„ warts on the teats	...	...	31
„ abscess on the udder	...	...	6
„ induration of part of the udder	...		3
„ generalised tuberculosis	...		3

No. with subacute mammitis	...	...
„ toul in the feet	...	...	2
„ septic and rheumatic arthritis	..		3
„ laryngitis	...	...	1
„ tubercular disease of the udder	...		1

The cows affected with tuberculosis were slaughtered and condemned at the Public Health Slaughterhouse. The cows at the greater number of farms visited were found to be in a very satisfactory condition as regards cleanliness, but at others, however, the hind quarters and udders of the cows were in a very dirty condition, on account of being allowed to lie in manure. The negligent cow-keepers were written to and cautioned and their attention drawn to the provisions of the bye-laws.

I regret to have to say however that letters of caution seem to have had little effect on the small number that are negligent in this respect, and it may be necessary for the purity of our milk supply to prosecute all defaulters in the future.

The percentage of cattle in our district affected with tuberculosis of the udder is remarkably small. This immunity can in part be accounted for in that the district is essentially given over to dairy farming, and the farmers exercise great care in the selection of their cows.

CONTAGIOUS DISEASES ANIMALS ACTS, 1894 TO 1910.

Orders and regulations of the Board of Agriculture under the above Acts during 1910, and action taken in connection therewith.

REPORTS. The usual reports required by the Board of Agriculture with regard to the number of samples taken in the Borough, and also with regard to action taken under the Lancashire Parasitic Mange Order, 1908, and the Fertilisers and Feeding Stuffs Act, 1908, have been duly sent each quarter.

SWINE. The Swine Fever (Regulation of Movement) Order, 1908, and the Swine Fever (Movement of Ireland) Order, 1904, which are the principle orders affecting the Borough,

continue in force. A local farmer was fined ten shillings and costs in each of two cases for infringing the order of 1908. No case of swine fever has occurred during the year.

SHEEP. The Sheep Dipping (England) Order 1908, is still operative and on two occasions the Inspector has been present at the dipping of sheep and saw that the requirements of the order were carried out.

CATTLE. There has not been any outbreak of disease affecting cattle during the past year.

HORSES. The Glanders Order of 1907 requiring notice to be given by the owner of any horse, ass or mule, affected or suspected of being affected with glanders or farcy is still in force in the Borough. No case has occurred during the year. The Lancashire Parasitic Mange Order, 1908, is still in force but no case has occurred during the year.

GENERAL. A new Anthrax Order, more stringent in its provisions has been issued during the year but will not be operative until the end of the year 1911.

Public Analyst's Report.

(WALTER RATCLIFFE, F.C.S.)

During this year, under the provisions of the Sale of Food and Drugs Acts, &c., I have had submitted to me by your Inspectors 407 samples, an amount slightly in excess of any previous year. This number of samples was made up as follow :—

Nature of Sample.	Total No.	Adulterated.	Genuine.
Milk	348	49	299
Butter	25	1	24
Margarine	5	—	5
Whisky	2	—	2
Brandy	2	—	2
Condensed Milk	2	—	2
Lard	5	—	5
Vinegar	4	—	4
Turpentine	3	—	3
Olive Oil	2	—	2
Cream of Tartar	1	—	1
Sweet Spirits of Nitre	8	1	7
Total	407	51	356

Of the total of 407 samples analysed, no less than 85·5 per cent. were of milk. I have previously dwelt on the extreme importance of vigilantly guarding the purity of the milk supply. The percentage of milk samples (85·5) far exceeds that of any previous year, but the results have quite justified this course. As indicated above in the table, of 348 samples taken 49 were adulterated. This works out at rather over 14 per cent. Such a figure has never, I believe, been previously recorded in this Borough. Moreover, many of the cases of adulteration were very serious. Thus eleven samples contained added water in amount exceeding 20 per cent., and five cases showed a deficiency in fat of over 10 per cent. Perhaps a better idea may be gained of the grossness of some adulterations by quoting Sample No. 335, which was a case of selling as ordinary milk, stuff which was deficient in fat to the extent of not less than 53·3 per cent.; also four samples which contained added water in the following amounts, viz.: 45·29, 47·00, 42·83, and 46·24 per cent.

A further consideration of vital importance is the nature of the water used in the sophistication, for in some cases it may be such as is

dangerously polluted, as for instance shallow well or even surface drainage water.

Butter and margarine have been tested for adulterants and for excessive water and for preservatives. In regard to the last, preservatives, I am pleased to say that the majority contained none at all, and the few in which preservatives did exist only contained such in very small proportion, much less than is allowed by the Acts. The preservative was, in every case, boric acid or a mixture of boric acid and borax. The more objectionable benzoic and salicylic acids were never detected.

The reckless selling of margarine for butter, which was very prominent in Bolton some few years ago, appears to have almost died out.

Vinegar was carefully tested in the four cases for pyroligneous acid and for mineral acids, but no trace was found. The adulteration of vinegar by mineral acids, generally sulphuric, which was fairly common at one time, seems to have been abandoned. Certainly I have not come across one for a long time.

In the year under review, some attention has been paid by your Inspector to drugs. Eight samples of Sweet Spirits of Nitre were submitted and analysed, with the result that one was found to be deficient in its most important ingredient to a serious extent. A fine was imposed in this case.

In my opinion there is room for increased activity in the matter of drug sampling.

The other classes of articles taken during the year do not call for any special comment.

Legal proceedings were taken in 45 of the cases of adulteration. The total fines imposed amounted to £37 10s. 0d. and costs. This amount is a big increase on the two or three years preceding. There were eleven fines of £2 and upwards.

Taking the whole 407 samples analysed, 12·5 per cent. were found to be adulterated. In some respects this figure is remarkable. Judged

by the records of several years previously, this figure of 12·5 per cent. is far in excess of any previous percentage. I refer not to Bolton merely but to the whole country. In other words, no City, Borough, or County has yielded a figure at all approaching this. Thus the figure for England and Wales in 1909 was 8·5 per cent., and in 1908 8·1 per cent. adulterated samples.

In my opinion it would be entirely wrong to assume from this fact that Bolton is much more subject to adulterated food and drug supplies than other large towns or the country generally; or that Bolton's commercial morality is lower than elsewhere. The explanation is an entirely different one. The results above indicated are due in very large measure to the energy and tact of the inspector responsible for the collection of the samples, and to the rapidity with which the samples have been examined.

I may cite, in proof of this contention, a large borough where the method of procedure is totally different. In this case, all samples are collected on fixed days. The result is obvious, and the percentage of adulteration falls much below the average for the country, viz.—8·5 per cent.

It is evident that it is just as necessary as ever it was that the administration of the Food and Drugs Act, &c. be carried on without any relaxation, or better, than the vigilance, energy and tact and the number of samples taken be materially increased. The importance of the subject and the growth of the Borough demand it.

TABLE VI.
HIGH STREET BATHS—NUMBER AND CLASS OF BATHERS, 1910.

Month.	No. of Weeks	Swimming Baths.			Slipper Baths.		Needle Baths.	Vapour Baths.	Season Ticket Holders.	School Children (Free).	Police. (Free).	Total	Corresponding period last year.
		at 3d.	at 2d.	at 1d.	at 6d.	at 4d.							
January ...	4	...	667	275	34	46	8	30	171	...	53	1284	1014
February ...	4	...	750	229	34	46	10	40	180	...	52	1341	1401
March ...	5	...	1319	662	72	101	16	50	204	...	87	2511	2212
April ...	4	353	633	1411	102	116	10	37	166	...	48	2877	2933
May ...	4	650	767	1987	111	131	18	36	167	12	42	3921	4865
June ...	4	1459	1032	3360	159	196	23	42	182	204	54	6711	6342
July ...	5	1616	1158	3478	223	354	55	57	171	189	77	7378	7003
August ...	5	1500	1542	3959	143	155	6	33	204	34	55	7631	8565
September ...	4	736	876	2615	93	120	14	26	119	198	40	4837	4509
October ...	4	528	842	1663	65	92	20	24	114	136	12	3496	2603
November ...	5	337	643	1155	75	71	8	23	139	...	16	2467	2132
December ...	4	39	78	105	75	98	12	20	167	...	10	604	1184
Total ...	52	7218	10307	20899	1187	1526	200	418	1984	773	546	45058	44763

TABLE VII.

TURKISH BATHS.—NUMBER AND CLASS OF BATHERS, 1910.

Month	No. of Weeks	Massage	Books of Tickets		Cash Tickets		Slipper Baths		Medicated Baths	Total	Corresponding period last year
			1st Class	2nd Class	1st Class	2nd Class	1st Class	2nd Class			
January ...	4	17	41	14	91	66	11	4	6	250	227
February..	4	19	40	22	99	84	6	10	4	284	279
March ...	5	31	50	33	154	137	11	6	1	423	419
April ...	4	43	43	19	126	91	14	8	6	350	320
May ...	4	34	38	28	105	86	10	11	1	313	356
June ...	4	22	31	33	94	98	11	9	3	301	275
July ..	5	18	25	22	62	69	12	10	6	224	315
August ...	5	20	40	23	129	100	13	14	1	340	362
September	4	4	34	21	86	80	9	8	2	244	238
October ...	4	61	41	22	111	85	6	8	3	337	337
November	5	11	45	34	119	94	4	11	5	323	329
December.	4	15	33	32	98	74	13	5	2	272	306
Total ...	52	295	461	303	1274	1064	120	104	40	3661	3763

Water Supply.

A general description of the water supply of the Bolton Corporation will be found in previous reports.

The supply area includes besides the County Borough of Bolton, the Urban Districts of Farnworth, Turton, Kearsley, Little Hulton, Aspull, Westhoughton, parts of Bury Rural, Worsley Urban District, Barton-on-Irwell, Atherton, the village of Edgworth and Belmont with an estimated population of 294,000 persons.

To this population over 6 million gallons of water are supplied daily for domestic and manufacturing purposes, and to the outside areas in bulk 430,000 gallons.

There are three watersheds, at Entwistle, Belmont, and Heaton and the corresponding reservoirs have a holding capacity of 1,108 million gallons.

Three sets of sand filters and one set of mechanical filters have been in use for some years, and during the year another set has been erected.

Mr. Mitchell has supplied me with the following information with regard to the improvements made during the year.

On the Entwistle gathering ground 7 farms covering 300 acres have been converted into sheep farms. In each case the dwelling-house and farm buildings have been demolished and the population reduced in number.

The lower portion of the Heaton Watershed has been entirely given up, and the upper portion will also eventually be disused when the Delph Reservoir, now being constructed, is completed.

An installation of 24 pressure filters has been provided at Ferns Park for treating water previously stored in Heaton Reservoir. The pressure filters at Sweetloves have been replaced by 16 more up-to-date ones. An additional sand filter has been provided at Dingle together with a service reservoir with a capacity of 200,000 gallons.

Weekly analyses have been made during the year, and tables are given below. The water from Belmont has been specially examined both by the Borough Analyst and Mr. Harcourt Philips on behalf of the Turton District, but there has been no indication of plumbo-solvency.

Some complaints were received in the summer with regard to the quality of the water from the Heaton Reservoir, but since this water has passed through the pressure filters, it has been uniformly good and no complaints have been received.

Tables are added giving details of analyses made during the year.

Analysis shewing Maximum of Pollution, 1910.

	RAW WATERS.			FILTERED WATERS.				STORAGE WATERS.	
	Entwistle.	Springs	High Rid.	Sweetloves (S).	Sweetloves (Mech).	Heaton (S).	Springs (S).	Sweetloves	Heaton.
Chemical. Free or Saline Ammonia ... Albumenoid Ammonia Oxygen Absorbed.....	7th Sept., 1910.	5th Oct., 1910.	9th June, 1910.	17th Nov., 1910.	12th July, 1910.	17th Nov., 1910.	17th Nov., 1910.	5th Oct., 1910.	7th Sept., 1910.
	.008	.0056	.0028	.002	.0008	.002	.002	.0052	.009
	.009	.019	.0252	.0064	.0024	.0068	.006	.009	.015
	.325	.600	.420	.200	.180	.210	.220	.295	.355
Bacteriological. No. of Microbes, per c.c. No. growing on agar- agar per c.c. B. Coli Communis, per c.c.	3rd Nov., 1910.	17th Nov., 1910.	3rd Nov., 1910.	17th Nov., 1910.	12th July, 1910.	17th Nov., 1910.	17th Nov., 1910.	5th Oct., 1910.	7th Sept., 1910.
	1115	645	1455	42	35	36	59	179	296
	160	72	177	5	5	4	7	20	36
	15	10	15	0	5	0	2	0	4

Average of 17 Analyses from January to November, 1910.

	RAW WATERS.			FILTERED WATERS.				STORAGE WATERS.	
	Entwistle.	Springs.	High Rid.	Sweetloves (Sand).	Sweetloves (Mech.) (8 Samples).	Dingle (Sand).	Heaton (S).	Sweetloves	Heaton.
Chemical.									
Free or Saline Ammonia ...	.004	.0058	.0041	.0012	.0028	.0013	.0014	.0029	.0024
Albumenoid Ammonia .....	.0066	.0081	.0104	.0042	.0028	.004	.0048	.0063	.0085
Nitrates .....	.000	Trace	.000	.000	.000	.000	.000	.000	.000
Oxygen Absorbed .....	.302	.367	.336	.222	.173	.246	.220	.232	.289
Nitrites .....	.000	.000	.000	.000	.000	.000	.000	.000	.000
Chlorine	2.030	1.960	2.203	2.027	2.083	1.957	2.203	2.025	2.124
Total Hardness... ..	4.500	4.100	6.200	4.808	5.281	3.952	6.216	4.647	6.227
Permanent Hardness	3.205	2.558	3.366	3.029	4.125	2.588	3.400	3.029	3.363
Acidity .....	.000	.000	.000	.000	.000	.000	.000	.000	.000
Plumb. Solvent Action.....	.000	.000	.000	.000	.000	.000	.000	.000	.000
Bacteriological.									
No. of Microbes, per c.c.	259	205	457	14	7	15	22	84	136
No. growing on agar- agar per c.c.	33	24	57	1	1	.15	2	10	15
B. Coli Communis, per 100 c.c.	5	4	8	0.1	0.5	0.3	0.2	0.3	3

SECTION IV.

Notification of Births.

Work of Health Visitors.

Control of Midwives.



Notification of Births Act, 1907.

This Act came into operation in Bolton on 7th March, 1908, and two Health Visitors who were appointed in consequence commenced their duties in April of the same year. The Act provides that :—

“ In the case of every child born in an area in which this Act is adopted it shall be the duty of the father of the child if he is actually residing in the house where the birth takes place at the time of its occurrence, and of any person in attendance upon the mother at the time of, or within six hours after, the birth, to give notice in writing of the birth to the Medical Officer of Health of the district in which the child is born, in manner provided by this section.”

The necessary information has to be given within 36 hours of the birth by delivering a written notice or posting a prepaid letter or postcard to the office or residence of the Medical Officer of Health.

The details of the births notified for the year 1910 are given below :—

NOTIFICATION OF BIRTHS, 1910.

1.	Total Births Registered in the Borough	...	...	4380
2.	„ Notified „ „	...	...	4063
3.	Number Notified in Nos. 1 and 2 Health Visitors' Districts	...	...	2930
4.	Total born living in whole Borough	...	...	3898
5.	Total stillborn	...	...	165
6.	Number Notified by Medical Men	...	...	616
7.	„ „ Midwives	...	...	3188
8.	„ „ Parents	...	...	259
9.	Total deaths under one year of age	...	...	505

Work of Health Visitors.

It was pointed out to the Sanitary Committee at the time the Act was adopted that at least three health visitors would be necessary to follow up these notifications if the whole of the Borough was to be

covered ; but as Medical inspection of school children was then under consideration, it was decided to wait till these arrangements had been completed and some experience had been gained of the results of the work that could be accomplished.

The duties of the Health Visitors were thus defined :—

1. To visit houses in which births have been notified and where no medical man is in attendance, to give advice in a homely and practical manner on the rearing and feeding of children.
2. To investigate all deaths of children under one year of age.
3. If required, to give lectures on the management of infants and in personal hygiene.
4. To visit, if required, factories and workshops where females are employed, houses and schools where infectious diseases are reported.
5. To perform such other duties appertaining to their office as may be required by the Sanitary Committee.

The three Health Visitors' Districts into which the Borough is divided are :—

District.		Estimated Population.		Wards.
1.	...	77391	...	West, Halliwell, North, Astley Bridge, Smithills.
2.	...	58259	...	Exchange, East, Church, Brad- ford, Tonge, Darcy Lever-cum- Brightmet.
3.	...	54665	...	Derby, Rumworth, Great Lever, Hulton, Deane-cum-Lostock, Heaton.

The routine of work is for the Health Visitor to visit the house within a few days of the birth, to obtain as much information as possible with regard to the child, the home circumstances and the sanitary condition of the house and to enter these on a birth enquiry card. Where no medical man is in attendance oral and written advice is offered with regard to the feeding and care of infants. Cases requiring help are referred to philanthropic societies and any insanitary

conditions noticed are reported to the Sanitary Inspector. Where the necessities require it revisits are made within a month of the date of birth, but in the great majority of cases this is only necessary within six months. In case of the death of the child within the year, another visit is made and information obtained as to the cause of death and other matters, all of which are recorded.

SUMMARY OF WORK DONE 1910.—DISTRICTS 1 AND 2.

1.	Total visits to houses	...	...	...	...	3110
2.	Birth enquiries made	..	...	...	...	1378
3.	Death enquiries made	...	...	...	...	182
4.	Revisits	...	...	...	...	1550
5.	Sanitary defects referred to M.O.H.	...	...	...	...	20
6.	Cases referred to or received from N.S.P.C.C.	...	...	...	...	19
7.	Cases referred to Philanthropic Societies	...	...	...	...	30
8.	Cases of neglect and improper feeding	...	...	...	...	65
9.	Number of long tube bottles in use	...	...	...	...	70

In addition to the above 489 first visits and 316 second visits were made by voluntary helpers belonging to one of the philanthropic societies, under the superintendence of the official health visitors.

The Home Office enquiry as to industrial employment of women and infant mortality which occupied much of the time of the Health Visitors during 1908 and 1909 was only completed during 1910 owing to the necessity of summarising the information and preparing the report. So much interest has been shewn in this enquiry that I have included the report and the summaries in this report.

For a period of over two years, two Health Visitors (Miss Ebbetts and Miss Ramsden) have been at work in Bolton and much has been done in giving advice to mothers with very satisfactory results.

We were fortunate in securing two conscientious, intelligent and hardworking officials who are devoted to their work and untiring in their efforts to save the lives of the children and improving the health of the mothers.

The Health Visitors are both agreed that the great majority of Bolton mothers are most anxious to do the best they can for their

infants, are grateful for the suggestions made to them and readily carry them out.

There is seldom a case of wilful neglect and when mistakes are made they do so from ignorance.

Long tube bottles are steadily declining in number.

A common practice which it is found difficult to prevent is the prolonged suckling of the child at the breast. It is a common occurrence to find children still at the breast at the age of 18 months.

The idea is still prevalent that it is impossible for children to cut their teeth successfully without the help of teething powders.

The mothers of the present day are not difficult to teach but it is surprising how many erroneous ideas still prevail amongst them. Beer and stout are still considered by many mothers necessary for the production of a good supply of breast milk. Not infrequently the advice of a grandmother who has "brought up eleven and five are living" is preferred to that of all others.

The houses were found as a rule to be clean and well kept, but owing to the unnatural fear of draughts, windows were often found closed until the advantages of fresh air were pointed out.

Many poor mothers were found who would have been glad of a little assistance in order to provide more food and clothing for themselves and their children and many are quite unable to pay for the services of a midwife except by weekly contributions.

Report on the Home Office Enquiry with regard to the Employment of Married Women and its effect on Infantile Mortality.

Area.

The district selected for the enquiry comprised West, Halliwell, Bradford, East, and Exchange Wards with a population of 87,000 inhabitants on an area of 1358 acres. It is in most parts a congested district where the poorer working classes dwell. The total number of births registered in the district during 1908 was 2325, and the average mortality of infants for the two years 1908 and 1909 was 150 per 1,000 births, varying from 195 in East to 113 in Halliwell, and compared with 146 for the old or congested part of the Borough and 137 for the extended Borough.

As it was impossible to make enquiries into all the births registered and the object of the investigation was to determine the effect of the industrial employment of women on Infantile Mortality as compared with those not industrially employed, the better class houses were not visited. The period was limited to the year 1908.

Births.

The number of living children actually enquired into was 1473, and of still-births 53. 187 births were untraceable owing to removals, but specific details were obtained of the history of the child and mother up to the end of the first year of life concerning 1286 children.

864 of the mothers were engaged the whole of the time in domestic duties and 422 were industrially employed as follows :—

273 in Factories and Workshops.

87 in places other than Factories and Workshops.

62 in industrial work at home.

Stillbirths.

Of the 53 Stillbirths, 34 of the mothers were employed in domestic duties, and 19 in industrial work. In other words, in mothers industrially employed there were 4·3 per cent stillbirths and in those engaged in domestic duties 3·7 per cent.

Infantile Mortality.

197 out of 1286 born living, died in the first year, making a total infantile mortality of 153. 72 deaths of infants occurred amongst mothers industrially employed showing an infantile mortality of 170·6 and 125 amongst those not industrially employed, equal to an infantile mortality of 145.

Those is Factories showing an infantile mortality of 154.

Elsewhere, *i.e.*, other than Factories and Workshops 195·4.

Industrially employed at home 209·6.

25 per cent. of the deaths occurred within the first month of life and 50 per cent. within the first three months.

Employment of Mothers in Industrial Work either at Home or in Factories.

With regard to children dying in the first year, 76 per cent of the mothers worked to within less than 3 months before the birth, as compared with 72 per cent. for the same period in children surviving the first year.

41·6 of the mothers of the children dying in the first year resumed work within three months as compared with 28·5 per cent. in the case of children surviving the first year.

Wages and Infantile Mortality.

There has been a period of depression both in the iron and cotton trades—the two staple industries of the town—and it is estimated that about $\frac{1}{3}$ of the working classes have suffered a reduction of wages, while a considerable number have been out of employment for varying periods. This depression began in the last three months of 1908 and lasted through the whole of 1909.

The number of households where the total income was under £1 per week was 386, and over £1 numbered 953, and the infantile mortality works out at 296 per 1,000 births of living children for the lower wages and 95 per 1,000 for the higher wages, compared with 153 per 1,000 for the 1,286 concerning which specific details were obtainable.

The Health Visitors who made these enquiries have also drawn my attention to many cases of extreme poverty where both before and after the birth of the child the mother was without sufficient food and clothing and even bedding. From time to time the midwives of the town have also brought such cases to my notice. Many of these cases have sought Poor Law Relief, but there are others who refusing to seek such aid suffer semi-starvation with the gravest results to both mother and child.

Surely it is not too much to ask the philanthropic public to devise some means for feeding the hungry mothers and providing them and their infants with sufficient clothing in their time of need.

General Remarks.

FEEDING.

Of the 1286 cases investigated there were :—

741 breast fed with a death rate of 60 per 1,000 births.					
161 breast fed partly	„	„	60	„	„
110 artificially fed	„	„	380	„	„

The enquiries were made and the elaborate schedules have been entirely completed by the two Health Visitors, Miss Ebbetts, and Miss Ramsden. I cannot speak too highly of their energy and industry and also of the intelligent assistance they have afforded me in the preparation of the summaries and the report.

As the first carefully prepared scheme for the investigation of the effect of the industrial employment of women on infant life, I am certain that the enquiry has been justified, and that it could not have been properly conducted without the aid of trained women health visitors.

On the following pages are given tables, a copy of the birth enquiry form, and the summaries which were forwarded to the Home Secretary.

**Analysis of Births and Deaths of Infants amongst Mothers
industrially employed in respect of work before
and after Childbirth.**

(a) Children Dying in first year	...	...	...	72
Worked to within less than 4 weeks before	12			
" " " " 8 "	15			
" " " " 12 "	28 — 55 = 76 per cent.			
Returned to work within 8	...	...	13	
" " " " 12 "	17 — 30 = 41·6			"
Did not resume work within 1 year	...	12		
(b) Children surviving first year, total...	...	...	350	
Worked to within less than 4 weeks before	26			
" " " " 8 "	70			
" " " " 12 "	157 — 253 = 72 per cent.			
Resumed work within 8 weeks	...	41		
" " " " 12 "	59 — 100 = 28·5			"

WAGES AND INFANTILE MORTALITY.

	Total Weekly Income.		Total.
	Under £1.	Over £1.	
Living Children
Deaths under 1 year
Infantile Mortality per 1,000 Births

AGES AT DEATH.

Total Deaths	...	...	197	
Under 1 month	...	...	54	} 50 per cent.
„ 2 months	...	...	25	
„ 3 „	...	...	20	
„ 6 „	...	..	44	
„ 12 „	...	...	54	

METHODS OF FEEDING.

Total Children surviving 1st year	...	...	1089	
Breast fed alone for 6 months	...	...	697	
Breast partly for 6 months	..	...	322	
Artificially for 6 months	...	...	70	
Total Children dying 1st year	...	...	197	Death-rate per cent. of Births.
Breast alone	...	...	44	6
Breast partly...	...	...	111	25
Artificially	...	...	42	38

BIRTH INQUIRY FORM.

No. of Case _____ Date of first visit _____
 Sanitary District _____ Date of last visit _____
Mother. Name _____
 Address _____
 Age _____ Race and Nationality _____
Living with Husband. Living apart. Widowed. Unmarried.
 General Health *Good.* *Indifferent* *Bad.*
Character of Confinement.
Doctor. *Midwife.* *Institution.*
 Previous History. No. of Marriages Still Births
 Children born alive Now living Died in 1st year of life
Description of work before present pregnancy
 *Other information _____

Note—In cases where the woman has been engaged only in domestic duties at home, either before or after childbirth, "Nil" should be written across the part inapplicable.

Work during pregnancy. How long ceased before birth _____
 Precise Occupation _____
Carried on at home. *In factory or workshop.* *Elsewhere.*
 Weekly earnings _____ Nature of work. *Heavy.* *Light.*
 Special conditions _____
Work after birth. Resumed _____ weeks after birth.
 Why resumed _____
 Precise occupation _____
Carried on at home. *In factory or workshop.* *Elsewhere.*
 Weekly earnings _____ Nature of work. *Heavy.* *Light.*
 Special conditions _____

Child. Full Name _____ Date of birth _____
Male. *Female.* Legitimate. Illegitimate Firstborn. Premature. Full Time.
Condition at first visit _____ at last _____
If death occurs, age at death _____ Cause of death _____
Feeding during first six months of life.
 Breast entirely for _____ weeks.
 Artificial food partly since _____ Why _____
 Artificial food entirely since _____ Why _____
 Nursing. *By Mother.* *By other person at home.* *Put out, where* _____

Birth Inquiry Form—(Continued.)

Father. Occupation. . Weekly earnings

Race and Nationality

Health. *Good.* *Indifferent.* *Bad.*

Home. Rent . No. of rooms

Condition

No. of family at home Weekly income of family

No. of lodgers

Remarks.

Instructions as to completing the Form.

This form has to be completed partly by striking out all the words printed in italics which are inapplicable to the case under inquiry, and partly by filling in the blank spaces which are left for the insertion of particulars. This arrangement has been adopted with a view to the particulars being given in all cases in as uniform terms as possible. The words underlined indicate the particulars which are regarded as essential if the objects of the inquiry are to be attained.

The form specifies in each case the precise information wanted, except in the case of the three following headings:—(1) "Other information," (2) "Special Conditions," (3) "Remarks." It is for the Medical Officer of Health (or the Visitor acting under his instructions) to include under these headings such particulars as he may think desirable, but it may be useful to indicate some of the points, not provided for elsewhere in the Form, which might be dealt with under these headings.

(1) "Other information."—Under this head mention any particulars obtained as to previous illnesses of the mother, character of previous confinements (by what complications, if any, attended), what employment engaged in previous to marriage, &c.

(2) "Special conditions."—Under this head note any circumstances rendering the work particularly arduous or injurious to health, *e.g.*, working with pedal sewing machines, carrying heavy weights, continual standing, working in a lead process, &c.

(3) "Remarks."—Under this head record the general progress of the case according to observations made at intermediate visits, habits and diet of mother, habits of husband, &c.

I.—CASES UNDER ENQUIRY.

SUMMARY.

		In case of mothers industrially employed,				In case of mothers <i>not</i> industrially employed.	
		At home	In factory or workshop.		Elsewhere.		
			In lead.	Otherwise.			
Children born alive, and surviving first year		49	NIL.	231	70	739	
" " " and dying in first year		13		42	17	125	
Miscarriages, Still Births, Prematur Births		2		13	4	34	
Age of mother	{ < 25 years	11		168	40	239	
	{ < 35 years	43		100	37	508	
	{ over 35 years	10		18	14	148	
Previous confinements	Miscarriages, Still Births ..	12		43	19	141	
	Children { born alive	261		320	266	2901	
		{ now living		187	219	176	2103
		{ died in first year. ..		49	74	61	446
	No previous confinement ...			4	149	31	132
Status of mother	living with husband	63		268	75	891	
	living apart	1		2	4	...	
	widowed ... ..	...		2	4	4
	single ... ..	...		14	8	3
Reason for industrial employment of mother.	A—as sole or main source of income	10		37	19	...	
	B—to supplement small income	51		183	62	...	
	C—preference for industrial work	3		66	10	...	
	Households (no. of)	64		286	91	898	
Average	{ no. of rooms per household ..						
	{ no. of persons per room (in- cluding lodgers)						
	{ rental						
Average weekly earnings of mother.		{ before confinement ...	amplified in separate sheet.				
		{ after confinement ...					
Average total weekly income of family ...							

NIL.

amplified in separate sheet.

AMPLIFIED DETAILS UNDER SHEET I.

I.—CASES UNDER ENQUIRY.—(Continued).

	At home.	In factory or workshop.	Elsewhere	In case of mothers <i>not</i> industrially employed.	Total.
NO. OF ROOMS PER HOUSEHOLD.					
3 or less	34	143	60	351	588
4 or more	30	143	31	547	751
NO. OF PERSONS PER ROOM.					
2 or less	46	261	70	751	1128
more than 2	18	25	21	147	211
RENTALS.					
Under 4/-	29	133	54	343	559
Over 4/-	35	153	37	555	780
WEEKLY EARNINGS OF MOTHER BEFORE CONFINEMENT.					
10/- and under	49	8	32	...	89
Over 10/-	7	252	55	...	314
WEEKLY EARNINGS OF MOTHER AFTER CONFINEMENT.					
10/- and under	28	5	15	...	48
Over 10/-	6	86	29	...	121
TOTAL WEEKLY INCOME OF FAMILY.					
£1 and under	19	66	20	281	386
Over £1	45	220	71	617	953

II.—EMPLOYMENT OF MOTHER IN RELATION TO HEALTH OF CHILD.

A.—Children surviving first year.

SUMMARY.

				In case of mothers industrially employed.			In case of mothers <i>not</i> industrially employed.	
				At home	In factory or workshop			Elsewhere.
					In lead.	Otherwise.		
Industrial Work discontinued before confinement.	{	< 1 week ...	22	NIL.	2	12	Engaged in domestic duties	
		< 2 weeks ...	10		6	6		
		< 3 weeks ...	3		8	6		
		< 4 weeks ...	3		10	6		
		< 8 weeks ...	2		44	12		
		< 12 weeks ...	7		87	14		
		< 26 weeks ...	2		66	14		
	over 26 weeks ...	...	8		...		
Industrial Work resumed after confinement, within	{	4 weeks ...	12		12	12		
		6 weeks ...	2		16	10		
		8 weeks ...	4		13	4		
		12 weeks ...	7		18	7		
		52 weeks ...	1		9	3		
		not within year ...	...		...	...
Nursed (at last visit)	{ at home	by mother ...	48		153	34		739
		by other person		22	15		...
	put out	1		46	21		...
Feeding	{ breast alone	< 1 month ..	1		28	2		30
		< 2 months ...	4		10	...		37
		< 3 months ...	4		18	...		17
		< 6 months ...	31		119	28		519
	{ breast partly	< 1 month	1		2
		< 2 months		1	...		3
		< 3 months ...	1		5	6		1
		< 6 months ...	6		35	25		85
	artificial entirely... ..		3	12	8	45		

II.—EMPLOYMENT OF MOTHER IN RELATION TO HEALTH OF CHILD.

B.—Children dying in first year.

SUMMARY.

				In case of mothers industrially employed.			In case of mothers <i>not</i> industrially employed.		
				At home	in factory or workshop.			Elsewhere.	
					In lead.	Otherwise.			
Industrial Work discontinued before confinement.	{	< 1 week ...	...	8	NIL.	2	1	125 engaged in domestic duties.	
		< 2 weeks ...	...	3		3	1		
		< 3 weeks ...	...	1		2	2		
		< 4 weeks ...	...	...		5	1		
		< 8 weeks ...	...	...		3	2		
		< 12 weeks ...	...	1		13	5		
		< 26 weeks ...	...	...		12	5		
	over 26 weeks	..	...	2		...			
Industrial Work resumed after confinement, within	{	4 weeks ...	...	2		5	1		
		6 weeks ...	...	3		5	1		
		8 weeks ...	...	...		3	...		
		12 weeks ...	...	...		4	1		
		52 weeks ...	...	...		1	...		
	not within year	...	...	...		...
Nursed (at last visit)	{	at home	{ by mother ...	13			24	14	125
		put out	by other person ...	...			4	...	...
			... ..	...			14	3	...
Feeding	{	breast alone	< 1 month ..	5			10	2	36
			< 2 months ...	1			4	1	9
			< 3 months ...	1			4	5	8
			< 6 months ...	3			4	3	34
		breast partly	< 1 month ...	...			...	...	1
			< 2 months ...	1			...	1	4
			< 3 months ...	...			2	4	2
			< 6 months ..	...			4	..	6
	artificial entirely	... ..	2	14		1	25		
Age at death	{	< 1 month ...	...	3			12	4	35
		< 2 months ...	...	3			3	16	
		< 3 months ...	...	...			5	4	11
		< 6 months ...	...	4			7	2	31
		< 12 months ...	...	3			15	4	32
Cause of death	{	infectious diseases...		1			3	1	8
		wasting diseases (including premature birth)		2			11	5	22
		other diseases ..		10			28	11	95
Mean age at death in months				5.18			4.535	4.38	4.28

II.—EMPLOYMENT OF MOTHER IN RELATION TO HEALTH OF CHILD.

C.—Miscarriages, Still Births.

SUMMARY.

			In case of mothers industrially employed.				In case of mothers <i>not</i> industrially employed.
			At home	In factory or workshop		Elsewhere.	
				In lead.	Otherwise.		
Industrial Work discontinued before confinement.	< 1 week	...	2	NIL.	1	1	34
	< 2 weeks	...	...		2	...
	< 3 weeks	..	...		1	...
	< 4 weeks	...	...		1	2
	< 8 weeks	..	...		4	...
	< 12 weeks	...	...		4	1
	< 26 weeks	..	...		...	...
	over 26 weeks	
Industrial Work resumed after confinement, within	4 weeks	..	1	NIL.	1	...	Engaged in domestic duties only.
	6 weeks	.	...		...	...
	8 weeks	...	...		...	...
	12 weeks	...	...		...	...
	52 weeks	...	...		...	...
	not within year	...	...		...	...

Control of Midwives.

The Act for the Control of Midwives was passed in July, 1902, and came into force on April 1st, 1903.

During the year 1910 one midwife gave up practice, and six notified their intention to commence practising in this area, leaving a total of 63 midwives on the register at the end of the year. Of this number 14 have the certificate of the Central Midwives Board, 13 have certificates from recognised institutions, and 36 were registered as having been in bona-fide practice for one year prior to 31st July, 1902.

In accordance with the regulations of the Central Midwives Board, I have received the following notifications from 35 midwives:—

- 88 Stillbirths.
- 129 Sending for medical help.
- 3 Deaths of children.

I have examined the case-books, instruments, and appliances of each midwife during the year, and find they have attended 3238 cases out of a total of 4380 births in the Borough.

School Medical Officer's Report

ON THE

Medical Inspection of Schools

AND

School Children,

. . 1910 . .

GENTLEMEN,

Medical Inspection of school children in Public Elementary Schools was begun in Bolton on December 2nd, 1908, and the following is the second report for a complete year, viz., 1910.

The duty to provide for this inspection was imposed upon the local Education Authority by Section 13, Education (Administrative Provisions) Act, 1907.

A special Sub-Committee, called the Medical Inspection Sub-Committee, consisting of four members of the Sanitary Committee and four members of the Education Committee, was appointed to supervise the work.

The School Medical Officer is required to make an annual report on the extent and scope of medical inspection, the facts disclosed, and the methods employed for the treatment of defects. As the School Medical Officer is also the Medical Officer of Health, reports on the hygienic conditions prevalent in schools, and the means taken for the prevention of the spread of infectious disease, are also included.

Much good work has already been done, and there has been a marked improvement already in state of cleanliness of the children, as will be seen from the report. Many children have been operated on for adenoids, etc., visual and other defects have been remedied, and the improved conditions in many children have been testified to both by teachers and parents.

The detection of marked physical defects has naturally led to the desirability and necessity of following up the children to their homes for the purpose of securing adequate medical treatment.

Every effort has been made to obtain the cordial co-operation of the parents and make them recognise their responsibilities to their children. All available local agencies are being made use of, and time only can show whether these will prove adequate for the purpose, or whether it will be necessary to resort to treatment out of public funds.

There is need for sanatorium accommodation for children suffering from pulmonary and other forms of tuberculosis, as no institution at present provides for it. These children, if not treated, are also deprived of their education, as it is necessary to exclude them from school.

The complete co-ordination of the School Medical Service with the Public Health Service has not only prevented overlapping, but has tended to simplification of administration, and has been of special advantage in the prevention of the spread of infectious diseases in schools.

I have to thank the Medical Inspection Staff for the care bestowed on the statistical details, and Dr. Moffatt especially for the facts disclosed by medical inspection.

I am,

Yours obediently,

JOHN E. GOULD,

School Medical Officer.

To the Chairman and Members

Medical Inspection Committee,

February, 1911.

Sanitary Survey of Schools.

Regular inspections are made of the schools by the Medical Officer of Health, and by the Sanitary Inspectors, for the detection of nuisances, on the outbreak of any infectious disease, whether notifiable or non-notifiable, and on receipt of any complaint. The Medical Inspection Staff visit each school not less than twice in each year, the School Medical Inspector on those occasions takes note of any sanitary defect in the building so that there is ample opportunity of obtaining information for a sanitary survey.

The sanitary condition of the Bolton Schools is on the whole satisfactory. The newer ones are well situated, well built, and a great improvement on the old ones. There are still defects, however, in the older schools, especially with regard to ventilation. Some of these defects could not be remedied without costly structural alterations, but most of the schools can be brought up to a good sanitary standard without much expense.

In the report of 1909 I gave a summary of the condition of the schools in respect of sanitary conveniences, yard surfaces, lavatories, cloak rooms, ventilation, and lighting. This showed that from 80 to 90 per cent. of the schools were satisfactory except in the matter of ventilation.

During the year our attention has been especially directed to the remedying of the most serious defects, and I am pleased to be able to report that good progress has been made.

The schools in Bolton are mainly ventilated by windows and doors, *i.e.*, on the natural system, aided by hoppers, Tobin's tubes and roof ventilators which in a few cases are worked by fans. The roof ventilators, especially where no fan is used, are more often inlets and give rise to unpleasant downdraughts. They cannot be cleaned, and dirt easily accumulates. In my opinion the ventilation is not as a rule improved by these ceiling openings, and where possible they should be abolished.

Continuous ventilation is best met by the method of hoppers of some kind placed about 5 or 6 feet above the floor and so arranged as

to direct the air upwards and so avoid a draught. In old schools where structural alterations would have been costly, this method has proved satisfactory. There is still, however, considerable timidity on the part of the teachers with regard to periodical flushing, or perflation, with fresh air of schoolrooms. In some schools this cannot be properly done as the windows are fixed, but in most the means provided are not systematically and regularly made use of. I referred to this defective flushing of the classrooms in my last report, and again quote the extract from the Board of Education Suggestions for the consideration of teachers:—"No matter how complete the arrangements for the continuous ventilation of a classroom may be, the scholars should leave the room at least once during each meeting and the doors and windows should be thrown wide open."

I would suggest that in all new schools at least one-third of the area of windows should be made to open, and that where possible schools should be built on the pavilion system, which for many years has been adopted in Hospitals for Infectious Diseases. At the same time the building should be planned so as to secure a maximum of sunlight in the classrooms.

Several schools have been painted and decorated during the year in a very satisfactory manner, and a high standard of cleanliness has been maintained.

The following summaries show the improvements affected and the sanitary defects found during the year :—

SANITARY IMPROVEMENTS IN SCHOOLS, 1910 (SUMMARY).

Defect remedied or Nuisance abated.	Schools.
Ventilation improved	Brownlow Fold, Gaskell St., Roscoe Fold, St. Matthew's, St. Thomas' Hall., Chalfont St., St. Paul's A.B. St. Mark's, Deane St. George-the-Martyr, Folds Road.
Natural lighting improved ...	St. Matthew's.
Artificial lighting improved ...	St. Matthew's, St. Mark's St. John's, SS. Peter and Paul's.
Heating improved... ..	St. Matthew's.
Lavatory basin and cloakroom accommodation improved or made sufficient.	St. Thomas' Hall., Holy Infants, St. George-the-Martyr.
Yard surface asphalted or concreted.	St. Matthew's, St. Thomas' Hall., St. James', St. Thomas' Lostock (part).
Yard surface flagged	Roscoe Fold (Boys).
New F.W.C. accommodation provided.	St. Paul's Deansgate, Pikes Lane
Ventilation of closets or urinals provided.	Hall. Road Wes., Sunning Hill.
Closets repaired	Brownlow Fold, Chalfont Street.
Urinals reconstructed	Brownlow Fold, SS. Peter and Paul's and Pikes Lane.
Urinals repaired	Chalfont Street.
Drainage improved	Tonge Moor Council, St. Paul's Deansgate.
New water service provided ...	Morris Green.

Organisation.

There has been no alteration in the Medical Inspection Staff, which consists of :—

School Medical Officer	...	...MEDICAL OFFICER OF HEALTH.
Assistant School Medical Officer	...	C. W. PAGET MOFFATT, M.A., M.B., D.P.H.
School Nurses	... ..	{ Miss C. S. KIPPAX, 3 years cert. { Miss G. M. FOWLER, 3 years cert.
Medical Inspection Clerk	...	...ALFRED BOWKER.

The Teachers and Attendance Officers have also assisted.

The Sanitary Inspectors have dealt with all nuisances in connection with the schools and made enquiries in connection with the spread of infectious diseases.

Except in the newest schools there are no special rooms set apart for medical inspection purposes, but satisfactory arrangements have been made with the least disturbance of the ordinary routine.

Much of the time of the staff has been occupied in recording details and preparing statistics for record and report. In as much as the purpose of the examination is remedial treatment, written and verbal recommendations are given in every case requiring it.

The Nurses when not actually engaged in school inspection visit the homes of the parents, to see that the instructions are carried out, and give advice with regard to minor ailments when no medical man is in attendance.

As the requirement of the Board for the examination of an intermediate group was cancelled in July, 1910, the children examined were those newly admitted, and those expected to leave before July 31st, 1911. In addition to these a large number of special children have been examined, and Saturday mornings have been devoted to these and the children specially referred for further examination.

Extent and Scope of Medical Inspection.

From information supplied by the Director of Education there were at the end of 1910, under the control of the Education Authority.

37 Voluntary Schools with 70 departments, 19 Council Schools with 40 departments, 4 Special Schools—two for the mentally defective and one for the blind and one for the deaf. The accommodation was, in Voluntary Schools 18,232, Council Schools 16,834, Special Schools 275, making a total accommodation of 35,342.

There were 30,124 on the rolls and 26,748 in average attendance, equal to a per centage of 88·7. The approximate number of entrants being 3,415, and leavers 3,125.

AGE GROUPS IN SCHOOLS.

		Under 5.		Over 5.
Voluntary Schools	...	1,386	...	14,486
Council Schools	...	1,257	...	12,777

SUMMARY OF WORK DONE.

1.	No. of visits to Schools	...	...	...	...	...	312
2.	No. of children examined	...	...	...	...	...	7862
	(a) Entrants	...	...	..	3228		
	(b) Leavers	...	...	...	3226		6454
	(c) Specials	...	...	...	...	...	1097
3.	Referred for special examination	...	...	...	...	...	311

ENTRANTS AND LEAVERS.

4.	No. of children with marked defects (irrespective of uncleanliness)	...	...	...	...	...	1354
5.	No. of second notices served	...	...	..	...	...	60
6.	Total No. of children excluded	...	...	...	...	...	338
7.	Bursars...	...	...	...	...	..	41
8.	Training College Students	...	...	...	...	...	102

CLASSIFIED LIST OF DEFECTS NOTIFIED TO PARENTS FOR TREATMENT
AMONGST ENTRANTS AND LEAVERS NUMBERING 6454.

	No.	%
Nutrition	227	3'5
Clothing	43	0'6
Footgear	101	1'5
Uncleanliness of Head (Notified and excluded)		
Boys	15	0'4
Girls	1072	33'4
Adenoids and Enl. of Tonsils (Notified) ...	554	8'5
Enlarged Glands	6159	95'4
Teeth + 4 decayed	1756	27'2
Ear Disease (Notified)	132	2'0
Defective Vision (Notified out of 3226)...	315	9'9
Tuberculosis of Lung	9	0'1
Rickets	221	3'4
Defective Speech	41	0'6
Heart Diseases	59	0'9
Nervous Diseases	58	0'9
Pyrexia	20	0'3
Infectious Diseases	47	0'7
Anaemia and General Debility	134	2'0
Delicate	369	5'7

AGE AND SEX DISTRIBUTION OF CHILDREN EXAMINED.
(ENTRANTS AND LEAVERS).

Age.	Boys.	Girls.	Age.	Boys.	Girls.
3—4	386	367	9—10	1	...
4—5	474	398	10—11	3	1
5—6	669	629	11—12	35	31
6—7	104	144	12—13	1441	1498
7—8	19	27	13—14	98	111
8—9	7	4	14—15	7	...
Totals Infants	1659	1569	Mixed	1585	1641

Facts disclosed by Medical Inspection.

(C. W. P. MOFFATT, M.A., M.B.)

General considerations suggested by the Medical Inspection of the school children of Bolton.

In order that the living child may not be lost sight of in the maze of dead figures I wish to preface my detailed statement of the examination of the school children of Bolton by some remarks on the lessons suggested by such examination ; and it must not be forgotten that the primary object for which medical inspection of schools was instituted, was the detection of physical defects in order that such defects might receive suitable treatment. What is really important is to find out what children are not in normal health and endeavour to have them restored to normal health. As one authority has said "No useful purpose would be served by expressing all the defects in percentages, or by comparing school with school or town with town. The outstanding facts of medical inspections are the existence of a very large amount of remediable physical inefficiency and the necessity of providing means for its amelioration." I find very little indifference to their children's health on the part of parents when once they are persuaded that treatment will benefit. The difficulty very often lies in the impossibility of pointing out the direction in which adequate treatment can be obtained. I feel it to be my duty to indicate some cases where I am quite unable to assist the parent in obtaining the requisite treatment.

I meet with a large number of cases of physical inefficiency for which the only effective treatment would be good food, healthy surroundings, cleanliness, and a properly regulated life. A few months of such conditions would often produce an effect which would be life-long in its results. For lack of them the child is too often condemned to a valetudinarian existence which is a far heavier burden on the community than the cost of the proverbial stitch in time. When these children are taken to a hospital or to a medical man the only part of the treatment prescribed which the parents can carry out is to keep the child away from school—treatment which in many cases is positively

injurious, the home being much more unhealthy than the school. What is the remedy? A Recovery School situated in the immediate neighbourhood of Bolton would be a complete provision for these cases. They cannot, in my opinion, be properly provided for by any charity; they can only be effectively dealt with by an institution under the direct control of the Education Authority. Bradford, Halifax, and Sheffield have led the way in the establishment of such schools in the North of England. I think it is high time that Bolton prepared to follow in their steps. Why should we wait for early cases of tuberculosis when we can do so much to prevent their ever arising? Sanatoria are excellent, but Preventoria are better.

I find cases of ringworm very disheartening. It is difficult in many cases to get the parents to take children suffering from this complaint to a medical man. They get a "salve" at the chemist's or apply the favourite local remedy, ink and tobacco juice. I think it will be found necessary to arrange for the treatment of such cases by the latest scientific methods.

One of the most obvious results of medical inspection is a distinct improvement in the cleanliness of the scholars, especially as regards the condition of the head. This has been noticed by the teachers, and by the nurses at the Boro' Hospital, who have been struck by the improved state of the heads of the children admitted. I am hoping to see spray baths fitted up in the new schools. Such baths are inexpensive, and I take this opportunity of repeating the opinion I expressed last year, that spray baths are infinitely more valuable from the health point of view than swimming baths; indeed I do not consider that the covered in swimming bath has any value at all from the health point of view. I have seen several instances amongst the school children where I felt confident that the health was being injured by attendance at the swimming bath. No child suffering from any ear trouble should be allowed to attend a swimming bath until medical examination has shown that such attendance is not likely to result in injury.

I allude further on to the desirability of a Children's Care Committee. Such committees exist already in Somerset, West Sussex,

West Riding of Yorkshire, Derbyshire, London, Reigate, Finchley, while in a considerable number of other areas, arrangements are on foot for the formation of such committees. Dr. Newman, Chief Medical Officer to the Board of Education, summarises as follows the work of such a committee.

DUTIES OF CARE COMMITTEES.—The duties of a Children's Care Committee are wide, since the problems which arise as the result of medical inspection are far-reaching, and if effective action is to be secured they require to be severally met. The more important of such duties may be grouped as follows :—

- (1) To follow up where necessary the work of medical inspection endeavouring to secure the treatment appropriate in the case of each child. This will involve action along two principal lines :—

- (a) The encouragement of the parent to obtain treatment in cases in which owing to indifference and ignorance no action has been taken.

- (b) The provision of the means of treatment in suitable cases ; for example, by obtaining hospital recommendations, the supply of requisite remedial apparatus, or the sending of a child to a convalescent home.

- (2) To endeavour to bring about in special cases permanent improvement in the condition of the home by regular visits of a friendly character. These conditions will obviously be of a varied character, which might well be set out at length in each locality.
- (3) To co-operate with the Local Education Authority in any arrangements which may be made for the provision of meals to necessitous children, whether in regard to the selection or periodical revision of such children or to the service of the meals provided.

- (4) To interest themselves in the question of the employment of children about to leave school.
- (5) To give particular attention to the various groups of school children educated in special schools exercising the function both of "care" and "after-care." Action of this kind will be necessary in the case (a) of *physically defective* children, as, for example, the blind, deaf, and crippled, and children attending the open-air school ; and (b) of *mentally defective* children.
- (6) To consider the question of the establishment of Holiday Homes and Country Schools and the provision of play centres and means of recreation out of school hours, and to form connecting links whenever possible with any society or organisation for promoting the welfare of young people by recreative and educational means. Valuable work in furtherance of Continuation Schools would come within this category.
- (7) To inculcate in every way possible the idea of the prevention of disease among children, whether by the arrangement of lectures or informal talks to mothers or by educational effort of a practical nature in the home itself.
- (8) To collect such funds as may be required to carry on the work of the Committee, and to administer any funds entrusted to it by the Local Education Authority.

I believe the right body to organise this Committee is the Guild of Help. Its advantages are so obvious that I do not propose in this place to elaborate them any further.

The examination of the school children has been conducted in close accordance with the Schedule of the Board of Education. The following are the only points of difference :—

The condition of the clothing and that of the footgear have been noted separately.

Vaccination marks have been looked for, and where found the number of cicatrices has been noted.

The colour of the hair and eyes has been noted. This matter will be found discussed below.

PRESENCE OF PARENT AT INSPECTION.—In the case of the routine examinations, that is the examination of the entrant and leaver groups, the parent or guardian is in every instance invited to be present.

When special cases are presented for examination by the teacher, or have been selected by the doctor or school nurses for examination, the parent is not always notified; but in every such case where an interview with the parent appeared desirable, the attendance of the parent has been secured at the school or at the Health Office.

The attendance of the parent at the examination has obvious advantages. Information can be obtained which could not be elicited otherwise.

But it has its disadvantages. Many children are specially cleansed for the examination, the notification to the parent thus defeating one of the objects of medical inspection.

Some children, too, are kept away from school on the day of inspection. Amongst these are often children who very badly need inspection, a fact quite well known to the parents who keep their children away in order that their dirty condition may not be discovered.

When parents formally objected to the examination of their children, such examination was not carried out. This occurred in only six cases during the year 1910. Children who were absent from examination at the notified time were in most cases examined without further notice, on the occasion of a subsequent visit to the school.

The actual number of parents at inspections during the year 1910 is as follows:—At the inspection of 3228 infants there were present 1027 parents or Guardians, that is 31·8 per cent. At the inspection of 3226 leavers there were present 506 parents or guardians, that is 15·9 per cent. This number of attendances by parents compares very favourably with towns where the social conditions are similar to those in Bolton. Dr. Greenwood, the School Medical Officer for Blackburn,

states in his report for 1909 that "so few parents have appeared that I have ceased to send for any to be present at the medical inspection in the schools."

A considerable number of parents who did not attend the inspection at the school attended at a subsequent examination at the office.

THE SELECTION OF CHILDREN FOR INSPECTION.—The groups of children examined during the year 1910 correspond to those examined during the previous year. They are :—

(a) Such scholars as began their school life since August, 1909, and had not been examined during 1909. This means that all newly admitted scholars, not being transfers from other schools, are examined as soon as possible after admission.

(b) Such scholars as finished their school life during 1910, with very few exceptions this means scholars whose thirteenth birthday fell during the year 1910. It will be seen from the table showing the age and sex distribution of the children examined during the year that very few children in Bolton remain at school after their thirteenth birthday. When it is remembered that the half-timer's last school year is a very unsatisfactory one from the school point of view it will easily be seen at what a disadvantage these children are placed as compared with children in towns where the usual age for leaving school is fourteen.

(c) Any scholars whom the head-teachers, on the occasion of the doctor's visit, thought fit to present for examination on account of some suspected defect. A considerable number of scholars are thus presented for examination. With a view to encouraging the teachers to present such cases I am arranging to visit all the schools during 1911 for the express purpose of seeing special cases.

(d) Scholars whom the doctor or nurses on visiting the various classes have picked out on account of their general appearance as needing medical examination.

SPECIAL EXAMINATIONS AT THE HEALTH OFFICE.—School children are examined every Saturday morning at the Public Health Office. The children thus examined have been cases referred by myself for a more thorough examination than is possible on the school premises,

and of children referred by the teachers and by Mr. Cain, the superintendent of attendance officers. The number of such cases examined was 311. For a large number of these cases admission to hospital or to convalescent homes was secured. A considerable number of cases have been seen several times when it was thought necessary to keep them under observation. These Saturday morning examinations have proved most useful and the parents have been in many cases most grateful for what has been done.

The following table shows the nature of the cases seen on Saturday mornings at the Health Office:—

Anæmia and General Debility	...	...	...	35
Defective Vision	...	..	...	20
Eye Diseases	...	...	...	35
Paralysis	...	...	...	7
Heart Disease	...	...	...	9
Doubtful Phthisis...	...	...	...	12
Definite Phthisis	...	...	...	10
Other Tuberculosis	...	...	...	12
Skin Diseases	...	...	...	42
Ear Disease and Deafness	...	...	...	25
Deformities	...	...	...	15
Adenoids	...	...	...	31
Mental	...	...	...	9
Oral Sepsis	...	...	...	1
Chronic Bronchitis	...	...	...	19
Injured Ankle	...	...	...	1
Foreign Body in Nose	..	...	...	1
Rheumatism	...	...	...	1
Chorea	..	...	...	1
Scarlet Fever	...	...	...	2
Measles	...	...	...	1
Nil	...	...	...	22
Total				311

TIME OCCUPIED BY INSPECTION.—The average time per child remains about five minutes. This is the actual time taken by the doctor, and does not include weighing, measuring, examination of clothing, etc.

I have again to thank the teachers of Bolton for the ready and courteous manner in which they have assisted the medical inspection. Medical inspection has undoubtedly added something to their already heavy burden of duties. This has, however, not affected the ability and cheerfulness with which they have given their assistance. The medical inspection staff is very grateful to them.

HEIGHT AND WEIGHT.—The children have been weighed and measured in their ordinary indoor clothing, but without shoes and stockings. Only the heights and weights of the children examined in the routine groups, that is of the ages three to six and twelve to fourteen have been recorded. Children examined at other ages have been selected for examination for some reason other than their age and statements as to their height and weight would be quite valueless. For purposes of comparison the standard heights and weights for England and Wales, published in 1883, are appended.

HEIGHT AND WEIGHT TABLE.

Age	No.	Average Height		England and Wales		Average Weight		England and Wales	
		cms.	ins.	cms.	ins.	kilos	lbs.	kilos	lbs
Boys									
3—4	244	91·2	35·9	93·5	36·8	14·8	32·5	15·4	34
4—5	304	97	38·2	97·8	38·5	16·2	35·7	16·9	37·3
5—6	398	100·5	39·7	104·1	41·0	17·4	38·4	18·1	39·9
12—13	1411	138·9	54·7	139·4	54·99	31·8	70·1	34·8	76·7
13—14	98	142·3	56·04	144·4	56·9	34·7	76·5	37·5	82·6
GIRLS									
3—4	224	88·9	35·0	92·0	36·2	14·2	31·4	14·3	31·6
4—5	250	96	37·8	97·0	38·2	15·7	34·6	16·4	36·1
5—6	361	100·6	39·6	102·9	40·5	16·7	36·9	17·8	39·2
12—13	1472	136·9	53·9	141·2	55·6	31·9	70·4	34·7	76·4
13—14	99	139·4	54·9	146·6	57·7	33·7	74·3	39·5	87·2

It will be seen that the Bolton children are below the standard height and weight for England and Wales at the ages recorded above, the most serious deficiency being in the weight of the children, boys and girls, of the ages 12 to 13 and 13 to 14. These standard heights and weights are, however, not attained anywhere. It will therefore, be more instructive to compare the Bolton children in the matter of height and weight with those of other towns. I have chosen for this comparison Blackburn and Oldham, Lancashire cotton towns, and Brighton, a town standing socially and geographically far removed from Blackburn.

AVERAGE HEIGHT IN INCHES.

Ages.	Males.				Females.			
	Bolton	Oldham	Blackburn	Brighton	Bolton	Oldham	Blackburn	Brighton
3—4	35·9	...	36·6	33·9	35·0	...	35·9	35·3
4—5	38·2	...	38·3	38·7	37·8	...	38·1	38·0
5—6	39·7	39·0	40·5	40·3	39·6	35·2	40·0	40·6
12—13	54·7	52·8	54·1	53·8	53·9	53·0	54·3	55·6
13—14	56·04	...	...	56·4	54·9	...	...	57·3

AVERAGE WEIGHTS IN POUNDS.

Ages.	Males.				Females.			
	Bolton	Oldham	Blackburn	Brighton	Bolton	Oldham	Blackburn	Brighton
3—4	32·5	...	33·4	31·3	31·4	...	32·0	30·2
4—5	35·7	...	35·6	34·6	34·6	...	34·7	34·2
5—6	38·4	39·0	39·0	37·2	36·9	35·2	37·0	37·0
12—13	70·1	69·2	72·0	68·1	70·4	69·0	71·6	73·4
13—14	76·5	...	...	75·0	74·3	...	...	80·4

These tables show that the Oldham children, both boys and girls, with the exception of boys of the age 5 to 6, are below the Bolton children both in height and weight. On the other hand the Blackburn children have a slight superiority over the Bolton children.

The Brighton figures are very interesting. It will be seen that while there is not much difference in height between the Bolton and Brighton boys at their respective ages there is a considerable difference in weight entirely to the advantage of the Bolton boys. The Brighton girls, on the other hand, are at the ages 12 to 13, and 13 to 14, considerably above the Bolton girls both in height and weight.

Croydon boys, again have at the age 12 to 13 an average weight of 76·5 lbs. or 8·4 lbs. more than Brighton boys. This seems an astonishing difference and suggests that there must be some lack of uniformity in the conditions under which the weighing and measuring is carried out.

It is obvious that the comparison of heights and weights in different areas has not much practical value.

It will be noticed that the lower the age the less does the Bolton average fall below the average for all ages in England and Wales. This shows that there is no physical degeneracy of the race, it proves that the inferiority in height and weight at the higher ages is not due to inherited causes, but is rather the result of environment on the individual.

HEIGHT IN RELATION TO THE COLOUR OF THE HAIR.—It has often been alleged that if we are to compare heights to any purpose we must know whether we are dealing with members of the same race. We could obviously not estimate the relative development of Eskimo and Zulu children by comparing their average heights.

The inhabitants of the British Isles are said to be made up of the following races ;

The Nordic or Teutonic, tall and fair, occupying the Eastern portion of the British Isles.

The Mediterranean, short and dark, found in the Western portion of the British Isles.

The Alpine, intermediate between these two in stature and colouration. This race is only slightly represented in our population.

In the British Isles, hair and eye colours form the easiest available test of race. The hair colours are classified as fair, red, light brown, dark brown, and black; the eyes as light (blue and grey), neutral, and dark (brown).

It is further claimed that there is a tendency for the short, dark haired element to collect in the great towns. In London, the darkest population, excluding alien immigrants, is to be found in the poorer and overcrowded central districts, while the suburban areas present a far greater proportion of fair-haired children.

In the following table I have grouped 5289 children examined according to the colour of the hair, and I have given the average height for each group. The figures in brackets give the number of children in each group. The children were grouped solely according to the hair. Below will be found a table showing combination of hair and eyes. A similar inquiry has been made in Blackburn in two successive years by Doctors Arnold and Linton. My results agree with theirs. If hair colour is a race characteristic, it is a more persistent one than stature, with which it does not appear any longer to be correlated.

HEIGHTS ACCORDING TO HAIR COLOUR.

Boys.

Age last Birthday.	Red.	Fair.	Light Brown.	Dark Brown.	Black or very dark.	Average.
3	35.2 (11)	35.7 (66)	5.6 (173)	36.0 (31)	.....	35.9
4	40.3 (24)	38.4 (61)	37.9 (209)	38.8 (71)	38.0 (1)	38.2
5	39.3 (23)	40.3 (71)	40.2 (299)	39.8 (101)	40.5 (1)	39.7
6	40.5 (2)	42.7 (9)	41.7 (49)	42.2 (23)	.....	...
12	53.7 (87)	53.7 (95)	53.9 (659)	54.2 (545)	54.3 (16)	54.7
13	55.1 (5)	54.4 (5)	55.0 (42)	57.2 (41)	56.0 (1)	56.04

GIRLS.

Age last Birthday.	Red.	Fair.	Light Brown.	Dark Brown.	Black or very dark.	Average.
3	35.3 (3)	35.8 (88)	35.6 (145)	35.3 (47)	.....	35.0
4	38.1 (8)	38.0 (68)	37.7 (175)	36.0 (58)	39.3 (3)	37.8
5	39.6 (18)	39.9 (69)	39.8 (268)	37.4 (115)	40.5 (2)	39.6
6	42.5 (6)	42.2 (20)	41.7 (49)	42.1 (31)	37.5 (1)	...
12	53.6 (33)	54.4 (133)	53.9 (623)	54.0 (595)	53.0 (10)	53.9
13	50. (2)	54.4 (4)	55.0 (40)	56.3 (52)	55.5 (1)	54.9

The following table shows in what manner the colours of hair and eyes have been found to be combined in the children examined :—

COLOURS (COMBINATIONS) OF HAIR AND EYES.

HAIR	Fair		Light Brown		Dark Brown		Red		Black		Dark	
EYES	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Grey ...	91	98	422	355	174	236	70	17	...	...	...	2
Blue ...	106	161	288	318	64	70	23	15	...	...	...	...
Brown ...	22	19	255	194	213	239	15	12	1	1	...	1
Hazel ...	9	12	84	85	53	54	11	10	...	...	...	1

It will be seen from this table, for instance, that of the boys with red hair, 70 had grey eyes, 23 had blue, 15 had brown, and 11 had hazel eyes.

CLOTHING.—The condition of the clothing and that of the footgear are reported on separately.

The condition of the clothing has been reported on as follows :—

Deptament	No.Exam.	Good		Average		Bad	Insuff.	Verm.
		No.	%	No.	%			
Entrants—Boys ...	1659	1428	86·0	213	12·8	14	1	3
Girls ...	1569	1386	88·3	170	10·8	6	2	5
Leavers - Boys ...	1585	1405	89·6	172	10·8	7	...	1
Girls ...	1641	1504	91·6	133	8·1	3	...	1
Totals	6454	5723	88·7	688	10·6	30	3	10

“ Verminous ” means infected by body lice, not by fleas.

It must be remembered that one result of intimating to the parents the time at which their children will be examined is that the clothing is very often not in its usual condition. The child and its clothing are specially prepared for the examination.

On the whole the Bolton school children are well clothed. I must again draw attention to the often filthy condition of the clothing of the

younger boys. Every article worn should be regularly washed. This is rarely done. I intend to bring this matter directly before the parents this year. The most suitable outfit for a schoolboy is

- (1) A combination garment.
- (2) Knickerbockers.
- (3) Woollen stockings.
- (4) Jersey of knitted wool.
- (5) Clogs or good laced boots.
- (6) Cloth cap.

The knickerbockers should be made of serge that will wash well.

Very few cases of insufficient clothing are noted; but a considerable number of boys have been seen who had no underclothing, their cotton shirt having merely a cotton lining over the chest. I find that all school doctors are agreed that these children are insufficiently clad. Their clothing will this year be noted as insufficient and the parents or guardians of the children will be notified to that effect.

Many cases of excessive clothing have been met with. These cases are far more numerous than those of insufficient clothing. I am constantly speaking to parents on the subject.

On the whole the clothing of the school children of Bolton may certainly be described as good.

FOOTGEAR.

Department.	No. Examd.	Good.		Average.		Bad.
		No.	%	No.	%	
Entrants—Boys...	1659	1513	91·2	102	6·1	44
Girls .	1569	1466	93·4	77	4·9	26
Leavers—Boys ...	1585	1493	94·2	68	4·3	24
Girls...	1641	1585	96·5	49	3·0	7
Totals	6454	6057	93·8	296	4·6	101

The great majority of the children wear clogs, and are well shod as the above table shows.

Opinions unfavourable to clogs have been expressed in some quarters, it being alleged that they may cause flat-foot or other deformities. I asked Mr. Robert Jones, the eminent Orthopaedic Surgeon, his opinion on this point and he has written to me as follows : " I examined the clogs you sent to me, and I am quite sure there is nothing in them that would help to bring about flat foot. They are distinctly badly shaped, and with a little alteration might be made quite a respectable footgear. In the first place, they are too boat-shaped at the bottom, the convexity too marked ; and instead of having a straight inner border, it is very much on the lines of the modern fashionable boot. With these alterations I think clogs are a much safer footgear than many of the specimens of boots one finds in the village shop.

In the examination of the boots the point to which most attention is paid is their capacity to keep out the wet and so ensure dry feet.

CLEANLINESS.

As I have already mentioned, a distinct improvement, in the matter of cleanliness has been noticed this year. That this is not very obvious from the figures is explained by the fact that this year a much stricter standard has been adopted.

BODY. The following table shows the condition of body found in the children examined :

Department.	No. Exmd.	Clean.		Clean and Fleas.	Somewhat Dirty.	S. D. and Fleas.	Very Dirty.	Verminous.	Ringworm.	Eczema.
		No.	%							
Entrants—Boys ..	1659	1500	90 4	57	77	20	4	1	1	..
Girls ..	1569	1402	90 5	71	73	17	2	4	..	2
Leavers—Boys ...	1585	1463	92 3	81	33	8	..	..	..	1
Girls ...	1641	1489	90 7	100	28	22	..	1	1	1
Totals.....	6454	5854	90 7	309	211	67	6	6	2	4

These figures are very satisfactory. Of course it must be remembered that the body can be cleansed for the examination, but not the head.

The conditions found in the examination of the heads have been classified as shown in the following table :—

Department	No. Exam.	Clean		Fairly Clean & Nits	Dirty & Nits	Verm.	Sores.	Ring-worm	Ecze-ma
		No.	%						
Entrants—Boys ...	1659	1560	94·4	76	8	4	3	10	2
Girls ...	1569	976	92·2	175	376	23	12	10	7
Leavers —Boys ...	1585	1567	98·8	12	1	2	...	4	2
Girls ...	1641	815	49·7	148	671	2	4	1	4

It will be seen from this table that the dirty head is in the main, a disease of girls, and more especially of the older girls.

As for preventive measures, I can only repeat what I said last year : school girls should either have their hair plaited in a pigtail, or should have it cut short.

In spite of the high percentage of older girls with dirty heads (nits or worse), 50·3 % of the girls leaving school, there is a distinct improvement this year in the average condition, and the nurses have found the parents more ready to adopt energetic measures for the cleansing of the heads. From my own observation I can vouch for the fact that it is not in the heads of children attending elementary schools only that nits are to be found.

It is not sufficiently realised that a verminous head may be a cause of serious ill health. I found one girl who had been absent from school for some time owing to her health, which was distinctly bad, her temperature being constantly above normal. She had a verminous head, with many sores. Cutting the hair short and thoroughly cleansing the head restored her to perfect health.

Medical inspection has undoubtedly made parents much more careful as to the condition of their children's heads.

RINGWORM.—Eighty-four cases of ringworm were met with, of these cases forty occurred in a very short time in one school. The source of the infection was traced.

Ringworm cases are all excluded from school and the Education Authority has recently passed a resolution that none of them shall be readmitted until the School Medical Officer is satisfied that they have ceased to be infectious.

They are very disheartening cases, as the treatment the parents obtain from unqualified persons is so often quite valueless. I think it will be found necessary to provide for the treatment in the most effective manner, that is by X rays.

As a preventive measure against the spread of ringworm I strongly recommend that boys should be made to carry their caps on their person during school hours. I wish the girls would wear some head-gear which could be dealt with in the same way.

NUTRITION.—The children are classified as “good,” “average,” or “bad.” The 6454 children examined according to the schedule were classified as follows:—

ENTRANTS.				
	No. Examined.	Good.	Average.	Bad.
Boys ...	1659	460 (27·7%)	1135 (68·4%)	64
Girls ...	1569	463 (29·0%)	1031 (65·7%)	75
	—	—	—	—
Total ...	3228	923 (28·6%)	2166 (67·1%)	139 4·3%

LEAVERS.				
	No. Examined.	Good.	Average.	Bad.
Boys ...	1585	161 (10·1%)	1382 (87·2%)	42
Girls ...	1641	371 (22·6%)	1224 (74·6%)	46
	—	—	—	—
Total ...	3226	532 (16·5%)	2606 (80·8%)	88 2·7%

These figures are very like those of last year, and very unlike those obtained in some other towns; Blackburn, for instance, where in his report for 1909, Dr. Greenwood classifies the 2596 newly admitted children as follows:—

Good,	87.1%
Medium,	11.9%
Bad,	0.9%

This classification differs very strikingly from mine, and yet the two groups of children are probably, as regards nutrition, very similar.

I will endeavour briefly to explain the principles by which I have been guided in my classification. I have not been guided merely by plumpness or by any relation between stature and height, neither of which are satisfactory guides in estimating nutrition. I have judged of nutrition by those signs by which I have always been in the habit of seeing physicians judge it: the conditions of the various systems, the firmness and tone of the muscles, the elasticity and general condition of the skin, the condition of the mucous membranes, &c.

I have asked myself as I examined a child: assuming that this child is free from organic or constitutional disease, could its nutrition be noticeably improved by good food, plenty of fresh air, and generally hygienic surroundings? Where the answer seemed to be in the negative, I have called the nutrition good.

When, though the child could not be described as otherwise than healthy, its condition as regards nutrition was obviously that of the "town" child—some flabbiness of the muscles, some looseness of the skin, &c.—that is when its condition was one which could be noticeably improved by good food, and really healthy condition of life, I have classed it as "average". I do not think any medical man who has had a considerable experience of "town" children, and who has observed their condition on admission to, and on discharge from, holiday camps, &c., can be in much difficulty as to this classification.

I have classified as "bad" those children whose nutrition was considerably below that of the average "town" child, the condition being obviously due to insufficiency of food or very unhealthy conditions of life, or perhaps both.

Next year I intend to classify children as good, normal, below normal, and bad. It is by a mistake that this year this classification was not adopted.

"The question of nutrition," as Dr. Newman says, "must always remain in a large degree a matter of individual opinion." This is very true and accounts for very different results, and makes their comparison futile. In spite of all I have read on the subject it seems to me that nutrition must always be estimated somewhat on the lines I have indicated, and can never be mathematically expressed.

TONSILS AND ADENOIDS.—The following table gives the number of cases of enlarged tonsils and adenoids, or of both combined, found amongst the groups of entrants and leavers, the cases being distributed according to age groups:—

Age.	Boys.				Girls.			
	No. Examined.	Enlarged Tonsils.	Enlarged Tonsils and Adenoids.	Adenoids.	No. Examined.	Enlarged Tonsils.	Enlarged Tonsils and Adenoids.	Adenoids.
3	386	35	14	10	367	12	14	10
4	474	35	36	10	398	35	26	12
5	669	60	58	23	629	47	34	15
12	1441	123	87	49	1498	168	95	42
13	98	8	4	2	111	15	10	3
14	7	1	...	...	...	...	...	...
Totals	3575	262	199	94	3003	277	179	82

This table does not include the children presented for special examination.

From this table we get the following percentages :

	Boys.	Girls.
Adenoids	8·2	8·7
Enlarged Tonsils ...	12·9	15·1

Operation was not advised in all these cases. Further remarks on this subject will be found below, in the section dealing with treatment.

I feel it to be my duty to emphasise once more the importance of removing enlarged tonsils and adenoids, if for no other reason than on account of the greatly increased risk should diphtheria or scarlet fever be contracted. A striking instance in illustration came under my notice during 1910. I diagnosed adenoids in a little boy whom I examined at one of the Bolton schools. The mother was present and agreed to have the child operated on. She, however, delayed having the operation performed; the boy contracted scarlet fever, and died of that very type of the disease which is so frequently associated with adenoid growths.

Parents, however, have become very much more alive to the importance of the operative treatment of this condition and the chief difficulties in dealing with it are the expense incurred if done privately, and the long delay inseparable from the great pressure put on the Bolton Infirmary.

Other conditions of the Nose and Throat :—

Enlarged Thyroid, 17 cases ; hypertrophic rhinitis, 7 ; atrophic rhinitis, 2 ; deflected septum, 9 ; dislocated triangular cartilage, 1 ; laryngitis, 3 ; chronic rhinitis, 1 : branchial cysts, 2 ; stenosis of trachea, due to tracheotomy, 1.

GLANDULAR ENLARGEMENT.—Over 90 per cent. of all the children examined have palpable glands, both submaxillary and cervical.

Marked enlargement was found in the following percentages of the children examined :—

SUBMAXILLARY.	Boys.	Girls.
(Entrants) ...	13·0	13·5
(Leavers) ...	13·5	14·0

CERVICAL.

(Entrants)	...	4'5	...	4'7
(Leavers)	..	4'0	..	7'0

Definite Tubercular Glands were diagnosed in 21 cases.

During the present year (1911) a more detailed classification has been adopted. Glands are classified as A (palpable), B (about the size of a haricot bean), C (much enlarged). The condition with which they are associated will also be noted.

TEETH.—The following tables show the distribution according to age and sex, of the condition of the teeth found in the children examined.

NUMBER OF TEETH DECAYED OR LOST.

Age.	No. Exam	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
BOYS.																		
3	386	248	34	32	21	15	7	4	1	4	1	...	...	...	...	...	...	...
4	474	213	48	58	34	43	16	15	9	12	1	3	...	2	1	...	...	...
5	669	212	49	105	71	69	44	31	20	22	8	12	3	9	4	...	1	3
6	104	22	8	9	13	15	6	8	6	9	1	1	1	2	...	...	1	...
7	19	2	1	2	1	5	2	2	...	...	2	2	...	...	...	...	...	...
8	7	1	...	1	1	2	1	1	...	...	...	...	...	...	...	...	...	...
9	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
10	3	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...
11	35	4	6	5	6	6	1	4	1	1	...	1	...	...	...	...	...	...
12	1441	123	150	282	267	254	117	85	55	37	14	6	...	2	1	1	...	...
13	98	8	12	12	20	20	12	6	2	1	2	1	...	1	...	...	...	...
14	7	...	...	3	...	1	1	...	1	1	...	...	...	...	...	...	...	...
	3244	833	308	511	434	432	207	156	95	87	29	26	4	16	6	1	2	3
GIRLS.																		
3	367	230	38	34	18	10	3	7	...	1	1	...	...	...	...	...	...	...
4	398	180	31	54	26	30	19	16	3	7	2	3	1	1	1	1	...	...
5	629	200	35	97	63	59	41	39	14	26	7	6	2	4	1	2	1	2
6	144	34	6	19	15	19	11	11	7	7	3	3	1	1	...	...	...	...
7	27	3	1	1	3	6	3	5	2	1	2	...	...	...	...	...	...	...
8	4	...	...	...	1	...	...	2	...	1	...	...	...	...	...	...	...	...
9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
11	31	1	5	8	9	5	...	1	...	...	...	...	...	...	...	...	...	...
12	1498	189	171	303	293	224	115	76	34	21	11	5	1	4	...	1	...	...
13	111	8	8	23	17	12	12	4	4	3	1	...	...	...	...	...	...	...
14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	3210	845	295	539	446	365	204	161	64	67	27	17	5	10	2	4	1	2

Below is shown the distribution of the condition of the teeth in three groups : sound teeth, less than four teeth decayed, four or more teeth decayed :—

TEETH.

Department.				Sound.		- 4		+ 4	
				No.	%	No.	%	No.	%
Entrants.	Boys ...	...	1659	698	42.1	541	32.6	374	26.3
	Girls ...	...	1569	647	41.2	495	31.5	343	27.3
Leavers.	Boys ...	...	1585	135	8.5	831	52.4	572	39.1
	Girls ...	...	1641	198	12.0	905	55.1	467	28.9
Total ...			6454	1678	26.0	2772	42.9	1756	31.1

It appears from this table that of the older boys only 8.5% had sound teeth, and of the girls 12.0%

There is a singular apathy amongst parents as to the condition of their children's teeth, an apathy not born of indifference, but of ignorance, and of a conviction that tooth-ache is the only condition of the teeth in children calling for treatment. There are, however, some indications of improvement in this respect.

One of the commonest conditions in children calling for attention is the undue persistence of milk teeth, especially when decayed.

It has again been borne in upon me during the year that the use or non-use of the tooth-brush is not the main factor either in causing or preventing dental caries. The use of the tooth brush is highly desirable from the point of view of cleanliness, but to talk, when the question of decayed teeth in children is mentioned, as if all that were needed were the regular use of the tooth brush, is, in my opinion, merely to draw a red herring across the track, and entirely to ignore what is now perfectly well established, that there is no very close connexion between the use of the tooth brush and the condition of the teeth of the children in our elementary schools.

I feel sure that the advice which is now constantly being given to parents concerning the care of the teeth is beginning to bear fruit, and that in time they will acquire the habit of taking their children regularly to the dentist without the stimulus of toothache.

I met with one case where serious disfigurement had resulted from grossly improper treatment by an unqualified person of a trouble of dental origin. This points to the imperative necessity of making sure that children kept away from school for any diseased condition are receiving treatment from a qualified person.

VISION.—Except in a few special cases the vision of children under six years of age was not tested. That of all children examined over six years of age was examined. A very large number of children not belonging to the routine groups was tested for vision.

The sight was tested by Snellen's type in the usual manner. The notation used in connexion with this test has the following significance.

$\frac{6}{8}$ means that at a distance of six metres type is read which a person with normal vision should be able to read at that distance $\frac{6}{9}$ means that type which normal vision can read at a distance of nine metres, can only be read at a distance of six metres; and so on with $\frac{6}{12}$, $\frac{6}{18}$, $\frac{6}{24}$, &c. $\frac{0}{60}$ means that at a distance of six metres the person tested cannot read what normal vision can read at a distance of sixty metres.

The following tables shows the condition of the sight in each eye of those whose vision was examined :

RIGHT EYE.

Boys											GIRLS.										
	+6	6	9	12	18	24	36	60	0		+6	6	9	12	18	24	36	60	0		
+6	96	12	...	1	...	...	...	1	1	73	2	...	...	...	...	...	...	...	...
6	10	1133	18	13	8	5	4	1	...	...	1171	23	8	9	3	5	4	...	...
9	...	34	19	9	8	2	2	1	...	...	21	45	15	7	5	3	...	...	...
12	...	4	6	22	21	5	5	...	...	...	10	11	30	31	5	...	2	...	...
18	1	11	5	15	17	10	1	2	...	...	5	4	20	25	8	1	2	...	...
24	...	5	2	3	6	5	2	...	...	...	6	4	3	10	13	4	...	...	...
36	...	4	1	3	2	4	6	...	...	...	2	3	3	1	1	5	1	...	...
60	...	3	...	3	...	...	1	7	1	...	3	2	...	2	...	2	9	...	...
0	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

+6 means vision more acute than normal.

From this table the following facts appear :

The total number of children examined was : Boys, 1561 ; girls, 1622.

Of the boys, 1305, or 83·6% had equal vision in each eye.

Of the girls, 1371, or 84·5% had equal vision in each eye.

Of the boys, 124, or 7·9% had better vision in the right eye than in the left ; 132 or 8·4% had better vision in the left eye than in the right.

Of the girls, 113 or 6·9% have better vision in the right eye than in the left ; 138 or 8·5% had better vision in the left eye than in the right.

The results of the vision testing of the 3183 children examined may be stated as follows :—

	Boys.		Girls.
Normal sight	80·2%	...	76·8%
Vision defective, but not worse than $\frac{6}{12}$ in the worst eye ...	8·0%	...	10·0%
Vision $\frac{6}{18}$, or worse, in the worst eye	11·8%	...	13·2%

It must be understood that these figures refer to children between the ages of twelve and thirteen.

Glasses have not usually been advised unless the vision in the worst eye was $\frac{6}{18}$ or worse ; but every case is considered on its merits.

Eyestrain, causing in most cases serious symptoms, was diagnosed in 57 cases, and appropriate advice was given. It should be widely known that eyestrain is the commonest cause of headaches in school children.

The importance of the early treatment of squint is constantly being impressed on the parents, 116 cases were noted.

It will be seen from the figures given above that the number of children requiring spectacles is about 12% of the total number examined.

133 children were found to be wearing glasses, in 50 cases the glasses being unsuitable.

I give no table showing the nature of the error of refraction found. I hope to do this next year.

DISEASES OF THE EYE.—CILIARY BLEPHARITIS. 77 cases were found. In every case care was taken to see whether the condition was associated with an error of refraction.

CONJUNCTIVITIES.—17 cases requiring treatment. The presence or absence of adenoids was established in every case.

CORNEAL ULCERS.—8 cases were found, all of which were excluded from school in order that they might have proper treatment.

CORNEAL OPACITIES.—14 cases.

OTHER CONDITIONS.—Blepharospasm, 1 ; Ptosis of lid, 4 ; Meibomian cyst, 1 ; Heterochromidia iridis, 4 ; coloboma iridis, 1 ; cataract, 6 ; dermoid cyst of lid, 1 ; subconjunctival ecchymosis, 2.

EAR DISEASE.—Amongst the 6454 entrants and leavers examined active otorrhœa was found in 115 cases, that is 1·8 per cent.

There was a history of more or less recent otorrhœa in 176 cases, that is in 2·7 per cent. of those examined.

Otorrhœa is one of the most disheartening conditions found in school children; it is so very difficult to make sure that any really effective treatment will be obtained.

In every case of active otorrhœa a careful examination was made for adenoid growths, and inquiry was made as to the possibility of recent infectious disease. Offensive cases were excluded.

Of the leavers 4·9 were found to be appreciably deaf. A large number of the cases were due to adenoids, and in practically all of these treatment was secured.

55 cases of deafness were found to be due to wax in the ears.

Accurate testing of the hearing in the infants presents many difficulties.

The following table gives the detailed statistics:—

EAR DISEASE.

Department.	No. Exam'd.	Otorrhœa Active.		Latent	Wax in Ears.	Other Dis.	Deaf.		
		No.	%				S.	V.	%
Entrants, Boys	1659	28	1·7	29	...	...	10	1	0·6
Girls	1569	24	1·5	23	5	...	14	...	0·8
Leavers, Boys	1585	33	2·0	55	26	...	70	7	4·9
Girls	1641	30	1·8	69	24	1	74	7	4·9
Totals	6454	115	1·8	176	55	1	168	15	2·8

DISEASES OF THE HEART.—Hæmic murmurs were noted in a large number of cases. They were of no importance.

Functional heart disease requiring treatment was found in 12 cases.

47 cases of organic heart disease were found. They are classified as follows:—

Congenital Heart Disease	...	3
Mitral Regurgitation	...	22
Mitral Stenosis ... ..	...	22

The parents were seen in every case. Frequently they were found to have had no suspicion that their children had any heart trouble.

Suitable instructions were given as to drill, &c.

Most of the cases of organic disease had their origin in rheumatism or one of the infectious fevers.

DISEASES OF THE LUNGS.—A large number of cases of subacute bronchitis were noted, most of them being associated with ricketty chests and adenoids.

Two cases of thickened pleura were found and one of pleural effusion. The latter was kept under observation, and definite pulmonary tuberculosis was eventually diagnosed.

Pulmonary tuberculosis is dealt with under tuberculosis.

DISEASES OF THE NERVOUS SYSTEM.—Owing to an error in the clerical work, details of all the cases of paralysis have not been kept.

CHOREA.—16 cases of chorea were noted. In every case attention was drawn to the importance of the child being carefully watched as regards rheumatism and the condition of the heart.

EPILEPSY.—12 cases of epilepsy were found among children attending school.

PARALYSIS.—30 cases of Paralysis were found, mostly infantile paralysis. Among them, however, were two cases due to injury at birth, one the result of cerebral hemorrhage caused by whooping-cough, and two cases of Erb's paralysis of the arm.

Several cases were, as the result of the advice given, operated on with excellent results.

TUBERCULOSIS.—Nine cases of definite pulmonary tuberculosis were found during the year in children attending school.

These have all been seen more than once. They are all excluded from school.

Four of them have been sent to convalescent homes, hospitals, &c. All that was possible has been done for the others, and they will all be visited.

Twenty-three doubtful cases were found. They have all been seen during January, 1911, and arrangements have been made for them to attend regularly at the Health Office for re-examination.

A Register has now been compiled of all children of school age who are suffering from, or who are alleged to be suffering from phthisis. They will be kept under observation, and will be re-examined periodically. Those who are attending school will be weighed at frequent intervals at their school. For many of the doubtful cases an open-air (or recovery) school would be the ideal treatment.

21 cases of tubercular glands were noted, and twenty cases of tuberculosis of bones and joints.

Tubercular abcess scars in the neck were found in a considerable number of children.

Special cards have now been provided for all definite or doubtful cases of pulmonary tuberculosis.

The notification of pulmonary tuberculosis has been compulsory in Bolton since 1905.

The following table shows the number of children between the ages of 3 and 14, notified during each year since notification became compulsory.

The most important step that could be taken in the fight against tuberculosis would be an open-air school. As one authority has said, "tuberculosis appears more amenable to treatment during childhood than in later life, and treatment is comparatively easy to obtain for a child with no dependents and no need to work to support others."

TABLE OF NOTIFICATIONS OF PULMONARY TUBERCULOSIS IN SCHOOL CHILDREN IN BOLTON.

		Boys.		Girls.		Total.
1906	...	7	...	8	...	15
1907	...	7	...	7	...	14
1908	...	4	...	8	...	12
1909	...	5	...	9	...	14
1910	...	15	...	11	...	26

DISEASES OF THE SKIN.—No record has been kept of such trifling skin troubles as pityriasis simplex, popularly called scurvy. It is a very common condition.

A large number of cases of impetigo of the face and of the scalp were found. They were nearly all excluded from school.

Only four cases of scabies were found.

Urticaria papulosa was found in a considerable number of the younger children. It is a condition which causes them much discomfort and suffering. Many were examined for this condition at the special request of the parents. It must in some cases be carefully differentiated from scabies. Abstention from fish, meat, and eggs appears to be the best treatment. Indeed some of the parents had noticed that eggs aggravated the condition. The routine prescription of aperients is quite useless.

That form of ichthyosis sometimes called xerodermia was found in 23 cases. In one or two it had aroused a suspicion of scarlet fever.

ACQUIRED DEFORMITIES.—Most of these have their origin in rickets.

The following table shows the distribution of ricketty deformities. Trifling deformities and beading of the ribs have not been noted.

Department.	No. Exmd.	Head.	Chest.	Legs.	Totals.	
					No.	%
Entrants, Boys ...	1659	2	22	76	100	6.0
Girls ...	1569	7	13	56	76	4.8
Leavers, Boys ...	1585	1	29	6	36	2.2
Girls ...	1641	1	5	3	9	0.5
Totals	6454	11	69	141	221	3.4

It will be seen that most ricketty deformities cure themselves as the children grow older. Where operation was considered necessary it was advised, and in a few cases, absolutely insisted upon. The real cure of these deformities lies, of course, in the correct feeding of young children.

Many cases of deformity of the chest due to respiratory obstruction chiefly adenoids, were met with.

OTHER ACQUIRED DEFORMITIES.—Torticollis, 4, dislocated head of radius, 2, ankylosed hip joints, 2, kyphosis, due to Pott's disease, 2, talipes, 4.

Lateral curvature of the spine was noted in 30 cases. Very slight curvature was not noted.

CONGENITAL DEFORMITIES.—Cleft palate, 7 ; hare lip, 3 ; syndactyly 1 ; congenital dislocation of hips, 3 ; talipes, 5 ; cervical rib, 1 ; hypospadias, 11 ; accessory auricles and bifid uvulae were not noted ; a large number were seen.

INFECTIOUS OR CONTAGIOUS DISEASE.—In addition to ringworm, scabies, impetigo, or some eye conditions, the following cases have been found in school :

Chicken-pox, 8 cases ; whooping cough, 20 ; mumps, 17 ; scarlet fever, 2.

OTHER DISEASES OR DEFECTS.—Pyrexia, 20 cases ; anæmia and general debility, 134 ; inguinal hernia, 8 : umbilical hernia, 2 ; vaginitis, 1 ; gastritis, 2 ; subacute nephritis, 2 ; intestinal worms, 12 ; subacute rheumatism, 11 ; epiphysitis, 1 ; cystitis, 1 ; axillary abcess, 1 ; ganglia of wrist, 3 ; chronic mastitis, 1 ; mucous colitis, 1 ; congenital syphilis, 1 ; catarrhal jaundice, 1.

VACCINATION.—In every case inquiry has been made as to vaccination, and the number of marks, when present, has been noted. The following table gives the details :—

ENTRANTS	No. OF MARKS.				No MARKS.	Un- Vaccinated.
	1	2	3	4		
Boys	288	386	205	586	101	71
Girls	260	364	230	562	79	57
LEAVERS						
Boys	324	535	202	314	117	88
Girls	353	519	209	306	128	96

Under “no marks” are entered those alleged to have been vaccinated but in whom no marks could be found.

It will be seen that of the entrants 4.0 per cent. were definitely stated not to have been vaccinated and 5.9 per cent. showed no vaccination marks.

Of the leavers 5.9 per cent. had not been vaccinated and 7.6 per cent. showed no marks.

Treatment of Defects.

The following summary of the work has been prepared by Nurse Kippax, and the review of the methods available by Dr. Moffatt the Assistant School Medical Officer.

Visits to parents	...	...	...	...	...	1495
Operations performed (Infirmary)	...	...	...	...	...	115
(Private)...	...	...	...	...	...	63
Enlarged Tonsils & Adenoids	...	...	...	...	...	138
Cervical glands	...	...	...	...	...	3
Mastoid	...	...	...	...	...	2
Alveolar abscess 1, polypus 1, trachetomy 1	...	...	...	...	...	3
Hernia 2, tubercular hip 1, torticollis 1	...	...	...	...	...	4
Strabismus 9, Cataract 2, Corneal opacity 3	...	...	...	...	...	14
Ricketty legs	...	...	...	...	...	14
Infantile paralysis	...	...	...	...	...	2
Glasses provided (private)	...	...	...	...	...	157
(Guild of Help)	...	...	...	...	...	36
Under private medical treatment...	...	...	...	...	...	344
Under dental treatment	...	...	...	...	...	12
Under home treatment	...	...	...	...	...	160
Attending Infirmary	...	...	...	...	...	352
Dirty and insufficiently clothed children cleaned and provided with clothes	...	...	...	...	...	188
Provided with clogs by Queen St. Mission	...	...	...	...	...	5
Sent to Convalescent Home per Queen St. Mission and Guild of Help	...	...	...	...	...	67
Sent to Borough Hospital...	...	...	...	...	...	16
Children referred to charitable institutions :						
Guild of Help	...	...	...	...	...	119
Queen St. Mission	...	...	...	...	...	96
Southport Convalescent Home	...	...	...	...	...	14
Lytham	„	„	...	...	...	51
Blair's Hospital	...	...	...	...	...	7
Edgworth Children's Home	...	...	...	...	...	1
Wilkinson Sanatorium	...	...	...	...	...	4
Royal Southern Hospital	...	...	...	...	...	9

Manchester Royal Infirmary	...	...	...	3
Pendlebury Children's Hospital	...	...	...	1
District Nursing Institution	...	...	...	1
N.S.P.C.C.	...	...	...	9
Other parents who promised to secure medical treatment	...	...	...	288
Bolton Infirmary, waiting cases	...	...	...	83

Review of the methods available for the treatment of defects.

When any child is found to be suffering from a serious defect the parent or guardian is notified immediately after inspection and is referred, in the first place, to the private medical practitioner.

A list of children suffering from such defects is handed to the head teacher and on this list the teacher notes the action that has been taken. These lists are eventually returned to the School Medical Officer.

In all cases of urgency, or where neglect, etc., is suspected, a visit is paid to the home within a few days of the inspection by the school nurse in order to find out what is being done and to urge on the parents the necessity of obtaining treatment. The number of visits thus paid to homes during the school year by the school nurses was 1495. These visits are invaluable, and the nurses are in the great majority of cases very well received.

With regard to adequacy of treatment parents can obtain from the private doctor in Bolton, if able to pay a reasonable fee perfectly adequate treatment for defects other than those specially referred to below. Medical inspection and the object lessons afforded by properly treated defects have had a very noticeable educational effect on parents and in the few instances where they receive assurances that their children will "grow out of" enlarged tonsils almost meeting in the middle line and massive adenoid growths obstructing the nasopharynx they have become very suspicious of such advice. Parents have become wonderfully alive to the importance of the operative treatment of these defects.

For necessitous children the Bolton Infirmary is the chief institution available for treatment. It has done all that it could possibly do and it is earnestly to be hoped that the funds necessary for its extension will soon be forthcoming. This would remove the most serious obstacle that has confronted those endeavouring to obtain proper treatment for necessitous children, namely the long and disheartening period of waiting for a bed at the Infirmary. Many parents have for this reason refused to take their children to the Infirmary, and it has made extremely difficult the proper "following up" of cases.

Some few cases have been referred to other hospitals, amongst which the Royal Southern Hospital, Liverpool, deserves especial mention. Some orthopaedic cases have been treated there with most gratifying results.

The provision of spectacles has not been much hampered by the inability of the parents to pay for them. The Guild of Help has rendered excellent service in this matter. The chief difficulty is the fear of the parents that the wearing of spectacles may hinder their children's prospects in life, a fear which is not altogether groundless, for at least one large mill in Bolton refuses to employ children wearing spectacles.

Few people realise how much is done for the poorer children by the teachers in providing clogs, clothing, etc. The unostentatious way in which this is done is a striking testimonial to the sincerity of their interest in the children under their care.

The Guild of Help and the Queen Street Mission have rarely failed to give effective assistance to the children referred to them by the Medical Inspection Staff. I venture to think that a Children's Care Committee in connexion with the Guild of Help might render invaluable assistance to those engaged in Medical inspection.

The conditions, alluded to above, for which it is at present extremely difficult for almost any parents to obtain adequate treatment are: sore eyes, running ears, ringworm, impeligo, and other skin conditions. These cases are most disheartening to the school doctor. Their home treatment is futile and leads to an immense amount of avoidable absence from school.

The following summary shows the treatment which is known to have been obtained. It is however by no means complete, as it has been found impossible to follow up all the cases by second or third visits, and the statistics of cases treated at the Infirmary or elsewhere, or waiting for treatment, are known to be incomplete.

Special Schools for Mentally Defective & Epileptic

There are two schools, one at Kay Street capable of accommodating 100 scholars, and one at Derby Street School with accommodation for 80. The actual numbers on the registers were 101 at Derby Street and 75 at Kay Street.

During the year there were 19 admissions to Derby Street and 14 to Kay Street.

The destinations of those who left were as follows :—

Destination.	Derby Street.	Kay Street.	Total.
To Work	4	4	8
To Institutions ...	2	2	4
To Home	—	2	2
Left District ...	6	3	9
Transferred to ordinary schools	—	3	3

At the last examination held at the end of December there were found :—

	Derby Street.	Kay Street.
Fit for Transfer	6	3
Shewing great improvement	44	18
Shewing improvement ...	35	42
Shewing slight improvement	6	7
Shewing no improvement	2	1
	<hr/> 93	<hr/> 71

An enquiry made during the year concerning all the children aged 16 and upwards who had passed through the Special Schools from the commencement was forwarded to the Chief Medical Officer of the Board of Education,

Derby Street Special School was opened in September, 1898, a Special Class was opened at Clarence Street School in July, 1899, and the new Kay Street School took the place of this Special Class in November, 1905.

The admissions and discharges up to 30th June, 1910, were as follows :—

			Derby Street.		Kay Street.
Total number of New Admissions	...	...	307	...	168
"	"	transferred from Kay Street to Derby Street	7	...	—
"	"	transferred from Derby Street to Kay Street	—	...	11
"	"	discharged from	212	...	86
(a)	To Ordinary Schools	...	38	...	21
(b)	" other Special Schools	...	13	...	18
(c)	" work	...	96	...	16
(d)	" Institutions, etc.	...	10	...	7
(e)	" Home	...	22	...	12
(f)	Died	...	13	...	3
(g)	Left the District	...	20	...	9

The information concerning children aged 16 and upwards was collected by the Director of Education.

		Derby Street.		Kay Street.	Total.
(a)	Number now working	86	...	31	117
(b)	Average wage per week between 16-20	10/6	...	10/6	—
(c)	" " " 20 & upwards	13/6	...	12/-	—
(d)	Number useful at home	17	...	11	28
(e)	" not useful at home	5	...	—	5
(f)	" at Institutions, Asylums, etc.	7	...	7	14
(g)	" untraceable or left the district	15	...	9	24
(h)	" dead	11	...	3	14

Blind and Deaf Children.

These two schools are in one building—the Thomasson Memorial School—which was opened in 1909. There is accommodation for 48 blind and 48 deaf children of whom 20 may be residents.

There were actually on the register at the end of 1910, 27 blind and 29 deaf children. Of these 12 are residents, including 5 admitted from other towns.

During the year 6 blind and 9 deaf children were admitted, and 2 blind children and 1 deaf child left.

Infectious Disease in Schools.

10 Infants' Departments were closed during the year for periods varying from three days to three weeks ; 8 of these closures were during the months of October and November.

On four occasions they were due to chicken-pox, three for mumps, one for mumps and ringworm, one for scarlet fever, and one for whooping cough.

Mumps was prevalent during the year, but the epidemic was a mild one and there were no deaths.

One school had 40 cases of ringworm chiefly in the Infants' Department which was closed for three weeks, and after this the cases were dealt with by the Medical Inspection Staff.

Appendix.



CAUSES OF DEATH.	Total.	SEX.		AGE.															
		M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50		
A.—General Diseases.																			
I.—Zymotic.																			
Small Pox																			
{ Vaccinated	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
{ Not Vaccinated	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
{ No statement	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cow Pox ...	1		1	1															
Chicken Pox	...																		
Measles ...	2	1	1		1	1													
Epidemic Rose Rash, German																			
Measles	...																		
Scarlet Fever	37	17	20	2	4	6	7	6	8		1	2			1				
Typhus ...	...																	
Plague ...	...																	
Relapsing Fever	...																		
Influenza	16	8	8		1								1	3		3	2		
Whooping Cough	53	22	31	24	19	4	2	1	3										
Mumps ...	...																	
Diphtheria & Membranous Croup	29	12	17	3	3	3	4	3	11			1			1				
Cerebro-Spinal Fever	...																		
Simple Continued Fever	...																		
Enteric Fever	12	7	5				1			2		1	2	1	2		1		
Asiatic Cholera	...																		
Epidemic Diarrhœa—Epidemic																			
or Zymotic Enteritis	47	25	22	36	8	1	1												
Diarrhœa, Choleraic Diarrhœa	15	10	5	7	4	1											1		
Dysentery	1	1																	
Malarial Fever	...																		
Hydrophobia	...																		
Glanders, Farcy	...																		
Anthrax, Splenic Fever	...																		
Tetanus	...																		
Syphilis	3	1	2	1	1	1													
Gonorrhœa, Stricture of Urethra	...																		
Puerperal—																			
{ Septicæmia, Sapræmia	2		2											1	1				
{ Pyæmia	...																		
{ Phlegmasia Dolens																			
(Thrombosis)	1		1												1				
{ Fever	2		2									1	1						
Infective Endocarditis	...																		
Epidemic Pneumonia,																			
Pneumonic Fever...	...																		
Erysipelas	2	1	1														1		
Septicæmia (not Puerperal)	2		2												1		1		
Pyæmia (not Puerperal)	...																		
Phlegmon, Carbuncle (not																			
Anthrax)	2	1	1														1		
Phagedœna	...																		
Other Septic Diseases	4	3	1	2												1			
Total Zymotic ...	231	109	122	76	41	17	15	10	22	2	1	5	4	5	7	4	7		
II.—Parasitic.																			
	1		1																
III.—Dietetic.																			
Starvation, Malnutrition	6	4	2	6															
Scurvy ...	...																	
Alcoholism, Delirium Tremens	2	2															1		
Opium, Morphia Habit	...																		
Ptomaine Poisoning	...																		
Industrial																			
Poisoning—Lead	2	2															1		
Phosphorus	...																		
Arsenic and other																			
Metals	...																		
Total Dietetic ...	10	8	2	6													2		

WARD

[illegible]

CAUSES OF DEATH.	Total.	SEX.		AGE.															
		M.	F.	0	1	2	3	4	5	10	15	20	25	30	35	40	45		
				to 1	to 2	to 3	to 4	to 5	to 10	to 15	to 20	to 25	to 30	to 35	to 40	to 45	to 50		
IV.—Constitutional.																			
Tubercular Phthisis (Pulmonary Tuberculosis) ...	168	109	59	1	4	...	...	...	1	1	8	14	12	21	27	18	23
Phthisis ...	27	13	14	...	1	...	...	...	1	...	2	1	4	3	8	1	5
Tubercular Meningitis ...	24	10	14	6	5	4	2	...	4	1	...	...	...	1	...	...	...
Tubercular Peritonitis ...	6	2	4	2	...	1	...	...	2	...	...	...	...	...	...	...	1
Tubes Mesenterica ...	10	7	3	7	1	...	...	2	...	...	...	...	...	...	...	...	...
Lupus ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tubercle of other Organs ...	15	8	7	...	1	1	...	...	1	1	...	1	1	2	3	2	...
General Tuberculosis ...	5	2	3	...	...	1	...	...	...	...	2	...	...	...	1	...	1
Scrofula ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rheumatic Fever, Acute Rheumatism ...	10	7	3	...	...	1	...	...	2	1	1	1	...	1	...	...	2
Rheumatism of Heart ...	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Chronic Rheumatism ...	4	1	3	...	...	...	...	...	...	1	...	...	...	...	1	...	...
Rheumatic Arthritis, Rheumatic Gout ...	4	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	11
Gout ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carcinoma ...	84	32	52	...	...	...	...	...	...	...	...	...	1	3	1	9	7
Sarcoma ...	8	5	3	...	1	1	...	...	...	...	1	1	...	...	1	...	11
Cancer, Malignant Disease ...	58	21	37	...	...	...	...	...	...	...	...	1	1	...	3	1	10
Rickets ...	2	2	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...
Purpura ...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Hæmophilia, Hæmorrhagic, Diathesis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anæmia, Leucocythæmia ...	16	5	11	...	...	...	...	...	...	...	...	...	...	...	...	3	11
Diabetes Mellitus ...	18	5	13	...	...	...	...	...	...	...	...	...	...	1	1	1	11
Total Constitutional ...	462	232	230	16	13	10	2	3	11	6	14	20	19	32	46	35	53		
V.—Developmental.																			
Premature Birth ...	81	47	34	81	...	...	...	...	...	...	...	...	...	...	...	...	...
Congenital Defects ...	17	6	11	17	...	...	...	...	...	...	...	...	...	...	...	...	...
Injury at Birth ...	5	3	2	5	...	...	...	...	...	...	...	...	...	...	...	...	...
Atelectasis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Want of Breast Milk ...	2	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Teething ...	26	8	18	19	5	2	...	...	...	...	...	...	...	...	...	...	...
Old Age, Senile Decay ...	177	72	105	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Developmental ...	308	136	172	124	5	2	...	...	...	...	...	...	...	...	...	...	...
B.—Local Diseases.																			
I.—Nervous System.																			
Meningitis, Inflammation of Brain ...	41	22	19	11	11	3	2	2	2	1	4	...	1	...	...	1	11
Softening of Brain ...	4	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
General Paralysis of Insane ...	12	9	3	...	...	...	...	...	...	...	...	...	1	2	...	3	2
Insanity (not Puerperal) ...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chorea ...	4	...	4	...	...	...	...	...	2	1	...	...	...	1	...	...	...
Epilepsy ...	13	9	4	...	...	...	...	...	...	...	2	3	...	1	1	1	3
Convulsions ...	48	22	26	36	5	1	3	...	...	...	...	...	...	1	2	...	...
Laryngismus Stridulus ...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Locomotor Ataxy ...	4	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Paraplegia and Diseases of Spinal Cord ...	8	3	5	...	...	...	...	...	1	...	...	...	...	1	...	1	...
Neuritis, Peripheral, Poly-neuritis ...	4	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Brain Tumour (not Specific) ...	5	1	4	...	...	...	...	...	1	1	...	...	...	...	1	1	...
Other Diseases of Nervous System ...	17	10	7	1	...	1	1	...	...	...	...	...	...	...	1	1	1
Total Nervous ...	163	87	76	49	16	5	6	2	6	3	6	3	2	6	5	8	9		

								WARD																
60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	60 to 65	65 and upwards	North	East	West	Exchange	Bradford	Church	Great Lever	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge	Tonge	Dar Lever c-Br hmet
9	3	2	...	...	...	5	163	6	7	34	5	15	7	8	20	3	4	9	20	3	6	8	11	2
...	...	...	...	...	...	1	26	1	1	11	...	4	...	2	2	1	...	...	2	...	...	...	2	1
...	...	...	...	...	...	17	7	1	...	3	1	6	...	...	1	...	...	...	3	...	...	3	1	4
...	...	...	...	...	...	3	3	1	...	1	...	...	...	...	...	...	...	...	3	...	...	1	...	...
...	...	...	...	...	...	16	...	...	3	1	...	1	1	2	1	...	...	...	1	...	...	...	...	...
...
...	1	...	...	...	...	2	13	...	1	3	2	1	1	1	...	...	...	...	5	...	1	...	...	...
...	...	...	...	...	...	1	4	...	...	...	...	1	...	...	...	1	...	...	1	...	...	...	...	2
...
...	...	...	...	...	...	1	9	...	2	2	...	1	1	...	3	...	...	...	1	...	...	...	...	...
...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	...	4	...	1	...	...	2	...	...	...	...	...	...	...	...	...	1	...	...
...	1	1	...	...	...	...	4	...	...	...	...	1	...	1	1	...	...	...	...	...	...	1	...	...
...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
12	9	8	3	1	...	...	84	1	3	23	4	12	2	3	9	1	1	3	11	...	3	4	3	1
...	...	...	...	...	...	2	6	...	1	2	...	1	...	1	...	...	...	...	2	1	...	...	...	...
10	5	8	2	...	...	...	58	5	3	11	3	7	4	1	4	3	2	2	2	1	5	1	4	...
...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...
...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...
1	5	2	...	...	...	...	16	...	...	1	...	4	1	1	3	2	...	...	3	...	1	...	...	...
3	2	1	...	...	...	...	18	1	1	4	...	1	1	1	...	1	1	...	2	...	2	...	3	...
36	26	22	5	1	...	44	118	16	23	98	15	57	19	21	44	12	8	14	59	5	18	19	21	10
...	...	...	...	...	...	81	...	3	7	13	1	9	5	8	10	3	1	5	8	1	1	1	3	2
...	...	...	...	...	...	17	...	...	1	...	...	2	2	3	4	2	...	...	1	...	...	...	2	...
...	...	...	...	...	...	5	...	...	...	...	...	4	...	...	...	1	...	...	...	...	...	...	...	...
...
...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
...	...	...	...	...	...	26	...	...	1	5	...	3	...	4	2	...	...	...	5	...	2	...	2	2
6	24	42	52	39	12	...	177	4	9	24	5	20	10	8	17	9	4	9	17	2	7	10	13	9
6	24	42	52	39	12	131	177	7	18	43	6	38	17	23	33	15	5	14	32	3	10	11	20	13
...
...	...	...	...	...	...	29	12	3	3	5	1	6	1	2	3	3	...	3	3	1	1	...	6	...
1	2	...	...	1	...	...	4	...	...	1	1	...	1	...	...	...	...	...	...	1	1	...	...	...
...	1	...	...	...	...	...	12	2	2	4	...	...	...	...	...	...	...	...	2	...	1	...	1	...
...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
...	...	...	...	...	...	...	4	...	1	1	...	...	...	...	1	...	...	...	1	...	1	...	...	...
...	...	1	...	...	...	...	13	...	1	3	1	2	...	...	3	1	...	...	1	...	1	...	...	...
...	...	...	...	...	...	45	3	...	3	6	5	8	1	2	3	2	1	3	8	...	...	1	3	2
...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
2	...	...	...	...	...	...	4	...	2	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
...	1	...	1	...	...	...	8	...	...	1	1	1	...	...	2	1	...	1	...	...	...	...	...	1
...	...	...	1	...	...	...	4	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...
1	...	...	...	...	...	...	5	1	...	...	...	...	...	1	...	...	...	...	1	...	1	...	...	1
3	1	1	3	...	...	3	14	1	...	5	1	1	...	1	1	...	...	2	2	1	1	1	...	...
8	6	2	5	1	...	78	85	8	14	27	10	18	3	6	13	7	2	11	20	2	6	2	10	4

CAUSES OF DEATH.	Total.	SEX.		AGE.															
		M.	F.	0	1	2	3	4	5	10	15	20	25	30	35	40	45		
				to 1	to 2	to 3	to 4	to 5	to 10	to 15	to 20	to 25	to 30	to 35	to 40	to 45	to 50		
II.—Organs of Special Sense.																			
Otitis, Mastoid Disease ...	11	4	7	1	...	1	...	...	1	1	4	...	1	...	1	...	...
Epistaxis, Nose Disease ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ophthalmia, Eye Disease ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Organs of Special Sense	11	4	7	1	...	1	...	...	1	1	4	...	1	...	1	...	...
III.—Heart.																			
Valvular Disease, Endocarditis (not Infective) ...	65	15	50	1	...	...	...	...	3	4	6	4	2	3	3	1	...
Pericarditis ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hypertrophy of Heart ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Angina Pectoris ...	8	7	1	...	...	...	...	...	...	...	...	...	...	1	...	2	...
Dilatation of Heart ...	15	6	9	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Fatty Degeneration of Heart ...	11	3	8	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Syncope, Heart Disease (not Specified) ...	106	58	48	4	...	...	1	...	...	...	2	1	2	2	7	4	...
Total Diseases of Heart	206	89	117	5	...	...	1	...	3	4	8	5	4	6	11	9	22
IV.—Blood Vessels.																			
Cerebral Hæmorrhage, Embolism, Thrombosis ...	105	55	50	...	...	...	...	...	...	...	1	...	1	1	2	1	...
<i>Apoplexy, Hemiplegia</i> ...	46	21	25	...	...	...	...	...	...	1	...	...	...	1	...	2	...
Aneurism... ..	4	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Senile Gangrene ...	5	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Embolism, Thrombosis (not Cerebral) ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phlebitis ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Varicose Veins ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Blood Vessels (other Diseases of)	7	3	4	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Total Diseases of Blood Vessels...	169	84	85	...	...	...	...	...	...	1	1	...	1	3	2	3	10
V.—Respiratory System.																			
Laryngitis ...	6	5	1	1	2	1	1	...	1	...	...	...	...	...	...	...	...
Membranous Laryngitis (not Diphtheritic) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Croup</i> (not Spasmodic or Membranous) ...	7	4	3	2	2	...	1	1	1	...	...	...	...	...	...	...	...
Other Diseases of Larynx (not Specified) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bronchitis ...	249	136	113	37	12	4	1	...	1	2	...	...	1	1	4	2	10
Lobar and Croupous Pneumonia	30	21	9	3	2	...	1	...	...	1	1	3	1	4	2	2	...
Broncho, Catarrhal and Lobular Pneumonia...	93	54	39	38	25	4	3	1	3	...	1	1	1	1	1	3	...		
<i>Pneumonia</i> ...	105	65	40	9	5	1	2	1	1	2	...	4	4	2	12	11	10		
Emphysema, Asthma ...	10	7	3	...	...	...	...	...	...	...	...	...	...	1	1	...	...
Pleurisy ...	14	11	3	...	1	...	...	1	...	...	...	...	...	2	1	2	...
Fibroid Disease of Lung ...	3	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Respiratory System ...	15	9	6	4	2	...	1	...	...	...	...	...	...	...	2	...	...
Total Diseases of Respiratory System ...	532	314	218	94	51	10	10	4	7	5	2	8	7	11	23	20	20		

								WARD																
50 to 55	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Exchange	Bradford	Church	Great Lever	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge	Tonge	Dar Lever c-Br'htmet
1	...	...	...	...	...	2	9	...	2	3	...	1	1	1	1	...	...	2	...	...	...	...	...	...
...
1	...	...	...	...	...	2	9	...	2	3	...	1	1	1	1	...	...	2	...	...	...	...	...	...
8	4	7	...	...	...	1	64	6	4	5	1	7	2	5	10	...	1	3	8	2	1	4	5	1
...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
1	1	1	...	...	...	...	8	...	...	2	...	1	1	1	...	...	...	...	2	...	...	1	...	...
4	2	1	...	...	...	...	15	1	1	1	1	1	1	1	2	...	1	1	1	...	...	2	1	...
2	3	1	...	...	...	...	11	...	3	2	2	1	...	1	...	...	...	...	1	...	...	1	...	...
19	11	9	7	2	1	5	101	3	4	21	3	12	3	5	10	2	4	2	12	3	3	10	6	3
34	21	19	7	2	1	6	200	10	12	31	7	22	7	13	22	2	6	6	25	5	4	18	12	4
15	21	20	10	2	...	...	105	8	12	18	1	9	5	6	8	4	3	6	5	3	2	10	5	...
11	5	5	1	...	...	...	46	3	2	5	...	9	5	4	2	1	...	1	5	1	1	4	2	1
...	1	...	...	...	...	...	4	...	...	1	...	...	...	1	...	...	...	...	...	1	1	...	...	...
...	1	1	1	2	...	...	5	...	...	1	...	...	...	1	1	1	...	...	1	...	...	...	...	...
...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
...
2	2	1	1	...	...	...	7	...	...	2	...	...	1	...	...	...	...	...	2	...	2	...	...	...
28	30	27	13	4	...	...	169	11	14	28	1	18	12	12	11	6	3	7	13	5	6	14	7	1
...	...	...	...	...	...	5	1	...	2	1	...	...	1	...	...	...	...	...	2	...	...	...	...	...
...
...	...	...	...	...	...	6	1	...	1	...	...	...	2	1	...	...	...	...	...	...	1	...	2	...
30	38	28	22	4	4	54	195	9	26	33	7	34	17	8	35	7	6	11	21	3	5	10	14	3
2	...	...	2	...	...	6	24	1	1	12	...	1	...	1	2	1	...	1	3	...	1	6	...	...
2	1	...	2	...	...	71	22	2	11	12	5	8	2	3	16	2	2	11	7	...	1	7	3	1
8	8	3	2	1	1	18	87	3	12	18	6	16	2	6	14	3	1	4	8	...	3	2	5	2
4	1	...	...	...	...	...	10	...	...	1	...	...	1	1	2	...	...	1	4	...	...	...	...	...
1	...	...	2	...	...	2	12	2	...	1	...	1	1	1	1	...	...	...	3	1	...	...	1	2
...	...	1	...	...	...	...	3	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	1	...
2	2	...	...	1	...	7	8	1	1	2	...	2	...	3	3	...	...	1	1	...	...	...	1	...
49	50	32	30	6	5	169	363	18	54	80	18	62	26	24	74	13	9	29	50	4	11	25	27	8

CAUSES OF DEATH.	Total.	SEX.		AGE.															
		M.	F.	0	1	2	3	4	5	10	15	20	25	30	35	40	45		
				to 1	to 2	to 3	to 4	to 5	to 10	to 15	to 20	to 25	to 30	to 35	to 40	to 45	to 50		
VI.—Digestive System.																			
Tonsillitis, Quinsy ...	2	2	...	...	...	I	...	...	...	...	...	I	...	...	...	...	...
Mouth, Pharynx Disease (not Specified) ...	2	I	I	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Gastric Ulcer ...	7	I	6	...	...	...	...	...	...	...	I	I	...	...	...	...	I
Gastric Catarrh, Gastritis, Gastro-Intestinal Catarrh ...	27	10	17	14	2	...	...	I	...	I	I	...	...	...	I	2	...
Other Diseases of Stomach (not Malignant) ...	11	7	4	7	...	...	...	...	...	...	...	...	...	...	I	...	...
Enteritis (not Epidemic) ...	20	11	9	14	I	...	...	...	I	...	...	...	...	...	...	...	I
Gastro-Enteritis ...	19	12	7	13	4	...	...	...	...	...	I	...	...	...	...	...	...
Appendicitis, Perityphlitis ...	14	9	5	...	...	...	...	...	1	I	I	I	...	2	3	I	2
Hernia ...	13	5	8	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Intestinal Obstruction ...	17	11	6	I	...	...	...	...	I	...	...	...	I	...	...	I	...
Other Diseases of Intestines ...	12	9	3	3	...	...	...	...	I	...	...	...	...	I	I	I	I
Peritonitis (not Puerperal) ...	4	2	2	...	...	...	...	...	I	...	...	...	...	2	I	...	...
Cirrhosis of Liver ...	23	15	8	...	...	...	...	...	...	...	I	...	...	...	I	I	4
Other Diseases of Liver and Gall Bladder ...	9	2	7	2	...	...	...	...	...	...	...	...	...	...	...	...	11
Other Diseases of Digestive System ...	2	...	2	...	...	...	...	...	...	...	...	...	...	...	I	...	...
Total Diseases of Digestive System ...	182	97	85	58	7	I	...	I	5	2	4	4	I	5	9	6	10		
VII.—Lymphatic System and Ductless Glands.																			
Spleen Disease ...	I	...	I	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Lymphatic System ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thyroid Body Disease ...	2	I	I	I	...	...	...	...	...	...	...	...	...	...	...	...	11
Suprarenal Capsules Disease ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Diseases of Lymphatic System & Ductless Glands...	3	I	2	I	...	...	...	...	...	...	...	...	...	...	...	...	11
VIII.—Urinary System.																			
Acute Nephritis ...	16	11	5	I	4	...	...	I	2	...	I	...	I	...	I	2	...
Chronic Bright's Disease, Albuminuria ...	91	41	50	...	...	...	...	...	I	...	5	...	6	4	4	6	10
Calculus (Not Biliary) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bladder and Prostate Disease ...	7	5	2	...	...	...	...	...	...	...	...	...	I	...	...	...	11
Other Diseases of Urinary System ...	3	2	I	...	...	...	...	...	...	...	...	...	I	...	...	I	...
Total Diseases of Urinary System	117	59	58	I	4	...	...	I	3	...	6	...	9	4	5	9	11
IX.—Generative System.																			
Ovarian Tumour (not Malignant) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Ovary ...	I	...	I	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Uterine Tumour (not Malignant) ...	I	...	I	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Uterus and Vagina ...	I	...	I	...	...	...	...	...	...	...	...	...	...	...	I	...	...
Disorders of Menstruation ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Generative and Mammary Organs ...	2	I	I	I	...	...	...	...	...	...	...	...	...	...	...	1	...
Total Diseases of Generative System ...	5	I	4	I	...	...	...	...	...	...	...	...	...	...	I	1	...
X.—Pregnancy and Childbirth.																			
Abortion, Miscarriage ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Mania ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Convulsions ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Placenta Prævia, Flooding, Accidental Hæmorrhage ...	I	...	I	...	...	...	...	...	...	...	...	...	...	...	...	I	...
Other Accidents of Pregnancy and Childbirth ...	8	...	8	...	...	...	...	...	...	...	2	2	2	2	...	...	...
Total Accidents of Pregnancy and Childbirth ...	9	...	9	...	...	...	...	...	...	...	2	2	2	2	I	...	...

ATH, 1910.

[illegible]

CAUSES OF DEATH.	Total.	SEX.		AGE.														
		M.	F.	0	1	2	3	4	5	10	15	20	25	30	35	40	45	
				to 1	to 2	to 3	to 4	to 5	to 10	to 15	to 20	to 25	to 30	to 35	to 40	to 45	to 50	
XI.—Locomotor System.																		
Caries, Necrosis ...	2	...	2	...	...	...	...	...	...	...	...	I	...	...	...	I	...
Arthritis, Periostitis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Locomotor System ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Diseases of Locomotor System ...	2	...	2	...	...	...	...	...	...	...	...	1	...	...	...	I	...
XII.—Skin.																		
Ulcer, Bedsore ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eczema ...	2	I	I	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Pemphigus ...	2	I	I	I	...	...	...	...	I	...	...	...	...	...	...	...	...
Other Skin Diseases...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Diseases of Skin ...	4	2	2	3	...	...	...	...	I	...	...	...	...	...	...	...	...
C.—Other Specified Diseases.																		
...	
D.—Ill-defined and not Specified Diseases.																		
Atrophy, Debility, Marasmus ...	74	42	32	71	3	...	...	...	...	...	...	...	...	...	...	...	...
Dropsy, Ascites, Anasarca ...	I	...	I	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tumour ...	I	...	I	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abscess ...	I	...	I	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hæmorrhage ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sudden Causes (causes unascertained) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Ill-defined Diseases ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Ill-defined and not Specified Causes ...	77	42	35	71	3	...	...	...	...	...	...	...	...	...	...	...	...
E.—Violent Causes.																		
1.—Accident.																		
In Mines and Quarries ...	2	2	...	...	...	...	...	...	...	...	I	...	...	...	I	...	...
Vehicles and Horses...	8	6	2	...	I	...	...	...	...	...	...	I	2	...	...	3	...
Ships, Boats, Docks (not Drowning) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Building Operations...	3	3	...	...	...	...	...	...	...	I	...	...	...	...	...	...	I
Machinery ...	4	4	...	...	...	...	...	...	...	I	2	...	...	...	...	...	I
Weapons and Implements ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Burns and Scalds ...	14	6	8	...	I	I	...	...	4	...	...	I	I	...	...	...	I
Poison, Poisonous Vapours ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Drowning ...	9	7	2	...	...	...	I	...	I	...	...	...	I	I	...	...	I
Suffocation ...	3	I	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Falls ...	13	6	7	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Weather Agencies ...	I	...	I	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Otherwise or not Stated ...	7	7	...	...	...	...	...	...	...	...	I	2	...	I	2	...	...
2.—Homicide.																		
...	
3.—Suicide.																		
...	12	6	6	...	...	...	...	...	...	...	...	2	...	I	4	...	...
4.—Execution.																		
...	
Total Violent Deaths ...	76	48	28	2	2	I	I	...	5	2	4	4	6	2	6	7	4	
Total from all Causes...	2568	1313	1255	509	142	47	35	21	64	26	50	52	56	76	118	104	162	

-Continued.

DEATH, 1910.

11

								WARD																
60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	50 to 55	5 and upwards	North	East	West	Exchange	Bradford	Church	Great Lever	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge	Tonge	Dar Lever c-Btmet
...	2	...	...	...	...	I	...	...	...	...	...	I	...	...	...	...	...	...
...
...	2	...	...	...	...	I	...	...	...	...	...	I	...	...	...	...	...	...
...
...	2	...	...	I	...	...	I	...	...	...	...	...	...	...	...	...	...	...	...
...	I	I	...	...	...	...	I	...	...	...	...	I	...	...	...	...	...	...	...
...
...	3	I	...	I	...	...	2	...	...	...	...	I	...	...	...	...	...	...	...
...
...
...	74	...	5	6	7	3	12	2	3	8	2	I	2	7	I	2	2	5	6
...	I	...	...	...	...	I	...	...	...	...	...	...	...	...	...	...	...	...
...	I	...	...	...	...	...	I	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	I	...
...	...	I	...	...	...	...	I	...	...	I	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...
...

TABLE II.

POPULATION, BIRTHS AND DEATHS IN PREVIOUS YEARS.

Year	Population estimated to Middle of each Year	Births		Total Deaths registered in the District.				Total Deaths in Public Institutions in the District.	Deaths of Non-residents Registered in Public Institutions in District	Deaths of Residents Registered in Public In- stitutions beyond District	Net Deaths at all Ages belonging to the District	
		Number	Rate	Under 1 year of age		At all ages					Number	Rate
				Number	Rate per 1000 Births Registered	Number	Rate					
1900	164240	4775	29.0	806	168	2952	17.9	119	16	285	3222	19.6
1901	168748	4648	27.5	794	170	2864	16.9	128	24	245	3085	18.2
1902	171082	4779	27.9	626	130	2741	16.0	160	31	240	2959	17.2
1903	173401	4700	27.1	704	149	2768	15.9	136	18	312	3062	17.6
1904	175744	4736	26.9	775	163	2743	15.6	129	28	279	2994	17.0
1905	178111	4481	25.1	724	161	2492	13.9	138	26	288	2754	15.4
1906	180502	4599	25.4	631	137	2551	14.1	138	27	270	2794	15.4
1907	182917	4476	24.4	646	144	2795	15.2	174	28	306	3073	16.7
1908	185358	4573	24.6	667	145	2599	14.0	153	38	313	2874	15.5
1909	187824	4750	25.2	590	124	2590	13.7	161	28	330	2892	15.3
Averages for years 1900-1909.	176792	4651	26.3	696	149	2709	15.3	143	26	286	2970	16.7
1910	190315	4380	23.0	499	113	2308	12.1	152	36	296	2568	13.4

CENSUS, 1901.

Total Population at all ages	...	...	...	168215
Number of Inhabited Houses	...	...	...	35995
Average Number of Persons per House	...	...	...	4.6
Area of District in Acres (exclusive of area covered by water)	...	...	...	14908

TABLE III.

WARD POPULATIONS, BIRTHS, AND DEATHS.

Names of Wards	Borough				North				East				West				Exchange				Bradford			
	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 Year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 Year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 Year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 Year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 Year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 Year
Year																								
1900.....	164240	4775	3222	814	7200	217	137	41	11000	338	276	60	28370	714	544	127	6750	167	147	39	19440	599	383	104
1901.....	168748	4648	3085	800	7386	179	118	22	10654	320	257	74	27290	695	451	106	5874	132	156	38	19852	636	441	118
1902.....	171082	4779	2959	633	7452	209	142	24	10556	312	245	57	27343	708	430	87	5724	173	150	28	19915	627	430	110
1903.....	173401	4700	3062	713	7520	203	141	33	10400	324	249	50	27410	684	469	121	5535	115	119	20	19980	651	401	111
1904.....	175744	4736	2994	792	7560	198	122	30	10275	312	231	70	27572	670	496	131	5331	151	101	34	20110	600	379	99
1905.....	178111	4481	2754	744	7600	175	97	25	10140	339	211	65	27705	677	436	115	5130	144	101	30	20220	572	363	110
1906.....	180502	4599	2794	636	7710	194	104	27	10040	300	207	51	27840	709	477	123	4950	132	96	15	20330	603	386	101
1907.....	182917	4476	3073	652	7810	186	118	15	9940	322	233	64	27960	691	491	106	4770	125	107	30	20430	547	402	102
1908.....	185358	4573	2874	677	7985	178	117	30	9631	321	211	62	28059	726	459	103	4234	125	101	18	20588	571	343	100
1909.....	187824	4750	2892	599	8071	208	121	17	9449	287	200	57	28143	707	464	93	3960	128	96	19	20677	582	407	85
Averages of years 1900 to 1909	176792	4651	2970	706	7629	194	121	26	10208	317	232	61	27769	698	471	111	5225	139	117	27	20154	598	393	104
1910.....	190315	4380	2568	509	8182	177	100	18	9626	270	183	39	28567	682	422	81	4070	118	85	23	20983	567	319	72

TABLE III, (Continued).

WARD POPULATIONS, BIRTHS, AND DEATHS.

Names of Wards	Church				Great Lever				Derby				Hulton				Deane-cum-Lostock				Rumworth			
	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year
1900.....	8760	161	143	25	7700	244	129	32	19190	607	424	119	4300	132	82	23	2700	98	55	16	6400	235	144	46
1901.....	8607	155	134	31	9098	230	139	31	19171	591	370	114	4545	135	77	29	3203	96	39	12	7263	220	164	44
1902.....	8604	172	158	24	9433	252	129	23	19315	616	367	104	4684	163	73	21	3209	92	36	8	7590	233	124	31
1903.....	8550	171	139	26	9900	236	150	34	19470	561	349	95	4820	150	78	13	3215	80	51	9	7925	249	129	29
1904.....	8545	168	138	38	10290	234	130	36	19685	601	360	103	4950	142	81	17	3231	81	60	5	8165	246	163	53
1905.....	8540	139	102	18	10697	214	159	36	19870	545	343	93	5080	146	79	27	3245	82	49	13	8415	224	122	43
1906.....	8537	164	135	17	11050	237	121	21	20120	555	344	87	5205	152	58	14	3250	89	32	8	8805	229	125	38
1907.....	8534	169	139	16	11428	240	167	33	20320	536	342	76	5330	137	78	19	3255	72	44	7	9205	241	152	37
1908.....	8472	159	143	32	11897	235	144	25	20552	510	347	94	5557	134	77	13	3230	97	69	14	9465	238	103	32
1909.....	8438	156	116	20	12357	261	165	33	20748	583	318	85	5715	156	80	13	3230	99	59	10	9814	243	127	34
Averages of Years 1900 to 1909	8558	161	134	24	10385	238	143	30	19844	570	356	97	5018	144	76	18	3176	88	49	10	8304	235	135	38
1910.....	8575	162	120	19	12468	247	135	32	21037	499	288	66	5776	139	75	13	3280	88	49	12	9906	241	122	28

TABLE III. (Continued).

WARD POPULATIONS, BIRTHS, AND DEATHS.

Names of Wards	Halliwell				Heaton				Smithills				Astley Bridge				Tonge				Darcy Lever-cum-Breightmet			
	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year
1900.....	17540	566	361	88	1530	29	25	1	3600	102	61	14	7510	188	109	21	8400	284	126	43	3850	94	76	15
1901.....	19746	591	349	87	1902	38	24	4	4412	121	54	13	7707	160	110	29	8562	260	147	37	3566	89	55	11
1902.....	20390	577	283	51	1930	38	31	5	4614	90	68	11	7849	194	137	25	8920	236	99	17	3554	87	57	7
1903.....	21070	572	339	75	1960	37	33	4	4830	138	87	25	7995	176	122	24	9301	256	141	29	3520	97	65	15
1904.....	21635	619	307	76	1994	57	41	10	5010	133	59	17	8155	180	111	22	9725	256	139	31	3508	108	67	15
1905.....	22305	529	303	96	2035	48	25	4	5187	143	74	14	8312	186	118	18	10145	239	117	27	3485	79	56	10
1906.....	22905	573	314	64	2050	46	33	4	5350	117	73	11	8440	188	111	17	10440	227	113	25	3480	90	65	13
1907.....	23580	536	371	80	2063	31	22	3	5522	119	80	11	8540	178	127	22	10755	260	132	23	3475	86	68	8
1908.....	24465	582	344	74	2135	42	26	1	5768	130	81	19	8850	182	100	22	11060	225	146	25	3410	118	63	13
1909.....	25207	606	312	60	2170	53	24	...	5984	127	84	9	9024	198	120	22	11456	257	137	31	3381	99	62	11
Averages of Years 1900 to 1909	21884	575	328	75	1976	41	28	3	5027	122	72	14	8238	183	116	22	9876	250	129	28	3522	94	63	11
1910.....	25470	513	258	44	2198	46	31	2	6040	129	74	9	9132	160	105	13	11565	252	139	25	3440	90	63	13

TABLE IV.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1910.

[illegible]

TABLE V.

CAUSES OF, AND AGES AT, DEATH DURING YEAR 1910.

Causes of Death	Deaths at the subjoined Ages of "Residents" whether occurring in or beyond the District								Deaths at all Ages of "Residents" belonging to Localities, whether occurring in or beyond the District													Total Deaths whether of "Residents" or "Non-Residents" in Public Institutions in the District			
	All Ages	Under 1 year	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwards	North	East	West	Exchange	Bradford	Church	Great Lever	Derby	Hulton	Deane-cum-Looslock	Rumworth	Halliwell	Heaton	Smithills		Asley Bridge	Tonge	Dar. L-cum-Breithmet
Small Pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Scarlet Fever	37	2	23	8	3	1	...	...	2	9	...	7	...	1	5	2	1	2	3	...	2	2	2	1	13
Whooping Cough	53	24	26	3	...	...	...	4	3	8	4	7	3	3	11	2	...	...	2	...	...	...	...	...	...
Diphtheria (including Membranous Group)	29	3	13	11	1	1	...	...	1	2	...	3	3	...	5	2	2	6	1	...	...	4	...	...	3
Croup	7	2	4	1	...	...	...	...	1	...	...	...	2	1	...	...	...	...	...	...	...	2	...	...	...
Typhus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever { Enteric	12	...	1	2	1	7	...	...	...	1	...	1	1	...	1	...	1	2	2	...	...	2	...	...	...
Other continued	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	1	1	...	1	...	...	...	...
Epidemic Influenza	16	...	1	...	...	13	2	1	...	4	...	2	...	...	...	...	...	...	...	...	1	...	...	...	...
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhoea	63	43	15	...	...	3	2	2	8	13	5	9	3	4	7	...	...	5	3	...	...	2	2	...	...
Enteritis...	39	27	5	1	1	3	2	2	1	7	1	8	...	1	10	...	2	1	3	...	...	1	2	...	...
Gastritis...	27	14	3	1	1	6	2	1	...	4	1	1	2	...	3	2	2	2	3	...	2	2	2	...	...
Puerperal Fever	4	...	...	...	1	3	...	...	...	...	...	...	...	...	...	1	1	1	1	...	...	...	...	...	...
Erysipelas	2	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phthisis (Pul. Tuber.)	195	1	5	3	25	156	5	7	8	45	5	19	7	10	22	4	4	9	22	3	6	8	13	3	...
Other Tuber. Diseases...	60	15	18	9	3	14	1	2	4	8	3	9	3	3	2	1	...	...	13	...	1	4	1	6	3
Cancer, Malign. Disease..	150	...	2	3	...	109	36	6	7	36	7	20	6	5	13	4	3	5	15	2	8	5	7	1	16
Bronchitis	249	37	17	3	...	96	96	9	26	33	7	34	17	8	35	7	6	11	21	3	5	10	14	3	1
Pneumonia	228	50	45	7	10	96	20	6	24	42	11	25	4	10	32	6	3	16	18	...	5	15	8	3	3
Pleurisy	14	...	2	...	...	10	2	2	...	1	...	1	1	1	1	...	...	...	3	1	...	...	1	2	2
Other Diseases of Respiratory Organs	34	5	7	1	...	16	5	1	3	4	...	2	2	4	6	...	...	2	8	...	...	2	...	...	2
Alcoholism	...	...	...	...	1	17	7	1	1	2	1	4	3	2	6	...	...	2	1	...	...	1	...	...	...
Cirrhosis of Liver {	25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Veneral Diseases	3	1	2	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
Premature Birth	81	81	...	...	...	...	...	3	7	13	1	9	5	8	10	3	1	5	8	1	1	1	3	2	...
Diseases and Accidents of Parturition	9	...	...	...	2	7	...	1	1	2	...	...	...	...	1	...	...	...	...	...	...	2	...	...	...
Heart Diseases	206	5	1	7	13	130	50	10	12	31	7	22	7	13	22	2	6	6	25	5	4	18	12	4	6
Accidents	64	2	4	7	8	34	9	2	4	11	2	11	3	3	8	1	1	5	6	1	1	1	2	2	...
Suicides	12	...	...	...	...	10	2	1	...	2	1	2	...	1	1	1	...	...	...	...	...	...	2	...	...
All other causes...	947	197	49	23	32	322	324	38	69	145	29	121	48	56	85	37	15	39	101	13	34	35	55	27	53
All causes ..	2568	509	245	90	102	1056	566	100	183	422	85	319	120	135	288	75	49	122	258	31	74	105	139	63	152

TABLE VI.
INFANTILE MORTALITY DURING THE YEAR 1910.
DEATHS FROM STATED CAUSES IN WEEKS AND MONTHS UNDER ONE YEAR OF AGE.

Cause of Death			Under 1 Week	1-2 Weeks	2-3 Weeks	3-4 Weeks	Total under 1 Month	1-2 Months	2-3 Months	3-4 Months	4-5 Months	5-6 Months	6-7 Months	7-8 Months	8-9 Months	9-10 Months	10-11 Months	11-12 Months	Total Deaths under 1 Year
All Causes	Certified	Uncertified	86	26	27	15	154	56	41	42	32	26	27	25	30	24	21	24	502
I. Common Infectious Diseases	Small Pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chicken Pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Measles ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Scarlet Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Diphtheria (including Membranous Croup)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
II. Diarrhoeal Diseases	Whooping Cough	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Diarrhoea, all forms	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Enteritis, Muco-enteritis, Gastro-enteritis...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Gastritis, Gastro-intestinal Catarrh	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Premature Birth	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
III. Wasting Diseases	Congenital Defects	...	56	7	5	2	70	5	2	3	1	...	...	...	...	...	...	...	...
	Injury at Birth ...	...	4	6	3	...	13	2	...	...	...	...	...	...	...	...	...	...	...
	Want of Breast-milk, Starvation	...	5	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...
	Atrophy, Debility, Marasmus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Tuberculous Meningitis	...	15	7	5	4	31	11	7	4	4	2	5	2	2	1	1	1	...
IV. Tuberculous Diseases	Tuberculous Peritonitis : Tabes Mesenterica	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Other Tuberculous Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Erysipelas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Syphilis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Rickets ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
V. Other Causes	Meningitis (<i>not Tuberculous</i>)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Convulsions	...	8	1	2	2	13	8	3	2	5	1	...	...	...	...	...	...	...
	Bronchitis	...	...	2	2	3	7	7	3	5	3	4	1	...	...	...	...	...	...
	Laryngitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Pneumonia	...	...	1	3	...	...	5	3	4	2	1	...	...	...	...	...	...	...
Other Causes	Suffocation, overlying ...	...	1	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...
	Other Causes ...	...	3	2	4	1	10	3	3	7	1	5	4	6	10	5	5	1	...
			93	26	27	15	161	56	41	42	32	26	27	25	30	24	21	24	509

Births in the year—Legitimate, 4204; Illegitimate, 176
Population, estimated to middle of 1910, 190315 Deaths from all Causes at all Ages, 2568.

VITAL STATISTICS FOR 33 GREAT TOWNS, 1910
(REGISTRAR GENERAL'S RETURNS).

	Towns	Birth-rate	Death-rate	Epidemic Death-rate	Infantile Mortality
	77 Great Towns	... 24·9	... 13·4	... 1·23	... 115
	1 Croydon	... 23·2	... 10·9	... ·61	.. 88
	2 Derby	... 24·1	... 11·0	... ·55	... 85
	3 Leicester	... 21·4	... 11·3	... ·68	... 127
	4 Bristol	... 21·6	... 11·5	... ·59	... 90
	5 West Ham	... 26·4	... 11·7	... 1·19	... 101
	6 Southampton	... 23·0	... 11·7	... ·69	... 79
	7 Cardiff	... 24·3	... 11·8	... ·94	... 112
	8 Norwich	... 23·0	... 12·4	... ·68	... 103
	9 London	... 23·9	... 12·7	... 1·14	... 102
	10 Halifax	... 16·5	... 12·8	... ·71	... 91
	11 Gateshead	... 27·1	... 12·9	... 1·35	... 152
(L)	12 BOLTON	... 23·0	... 13·4	... 1·02	... 116
	13 Sheffield	... 26·5	... 13·4	... 1·49	.. 127
	14 Plymouth	... 20·2	... 13·5	... 1·16	... 114
	15 South Shields	... 28·0	... 13·6	... 1·24	.. 113
	16 Birmingham	... 26·2	... 13·6	... 1·12	... 130
	17 Leeds	... 22·1	... 13·6	... 1·27	... 132
	18 Portsmouth	... 26·6	... 13·7	... 1·36	... 104
	19 Newcastle-on-Tyne...	26·4	... 13·8	... 1·15	... 120
	20 Bradford	... 18·6	... 14·0	... 1·24	.. 127
(L)	21 Blackburn	... 21·4	... 14·1	... 1·31	.. 137
	22 Nottingham	... 24·8	... 14·1	... 1·02	... 129
	23 Brighton	... 19·8	... 14·2	... 1·26	... 111
(L)	24 Salford	... 26·7	... 15·1	... 1·70	... 130
	25 Hull	... 28·6	... 15·2	... 1·75	... 135
	26 Rhondda	... 40·7	... 15·6	... 1·69	... 136
	27 Sunderland	... 28·5	... 15·8	... 1·43	... 129
(L)	28 Manchester	... 27·1	... 16·0	... 1·79	... 131
	29 Birkenhead	... 30·4	... 16·2	... 1·78	... 134
(L)	30 Preston	... 23·6	... 16·2	... 1·71	... 158
(L)	31 Burnley	... 24·9	... 16·3	... 2·46	... 170
(L)	32 Oldham	... 25·8	... 17·2	... 1·81	... 128
(L)	33 Liverpool	... 30·1	... 17·7	... 2·28	... 139

